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Retro reboot: The new Norton California is a comfortable take on the modern classic. P. 52



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First start: Dan Smith's Velocette Roarer replica

After you read the full story of how Dan Smith of Vancouver, B.C., built a replica Velocette Roarer from scratch (Page 70), head to our website to see the first start up of the bike. The sound is impressive. Go to MotorcycleClassics.com/Roarer to see more.



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Looking back

The beginning of a new year often finds us looking back in the rearview mirror of life, pondering what's been and is now gone as we move forward. I'm not usually one to dwell on loss, but it feels somehow wrong — improper even — not to note the passing of some major figures from our universe, faces that won't be shining their light on our little corner of the world anymore.

Although best known in automotive racing circles, Dan Gurney, who passed away Jan. 14, 2018, at the ripe old age of 86, was well known to our group. An avid motorcyclist himself, in his later life he focused his passion on the Alligator, a semi-recumbent-style motorcycle he developed to make riding more fun for tall riders like himself.

A month before, on Dec. 10, 2017, we lost Bruce Brown. Known to every motorcyclist of a certain age, Brown's critically acclaimed 1971 film, *On Any Sunday*, helped launch motorcycling into the American mainstream, thanks in no small part to the involvement of superstar actor Steve McQueen, with supporting roles by major racers including Mert Lawwill and Malcolm Smith.

Closer to home for me was the passing on Dec. 16, 2017, of Derek "Nobby" Clark, 81. A mechanic to the stars, the list of racers whose bikes he fiddled reads like a *Who's Who* of Sixties and Seventies motorcycle racing greats, including Mike "The Bike" Hailwood, Jim Redman, Giacomo Agostini, Gary Hocking, Kenny Roberts, Barry Sheene, Jarno Saarinen and more.

Born in Rhodesia (now Zimbabwe), Nobby's career was aided by fellow Rhodesian and high school friend Hocking, who hired him as his tuner when he started riding for MV Agusta in 1960. After Hocking's death in 1962, Nobby tuned for Redman, which led to his hiring by the Honda factory, a relationship that cemented his career as a foremost GP tuner. During his time with Honda he tuned the brand's epic 4-, 5- and 6-cylinder GP machines, remarking about the multi-cylinder Hondas in one interview that "you had to use tweezers on a lot of parts, like valve collets, because the parts kept getting smaller, but your fingers stayed the same size."

I first met Nobby in 2006 at AMA Vintage Motorcycle Days at the Mid-Ohio race track. I had tagged along with a group gathering to meet some of the great Daytona Beach racers of the Fifties, and was standing off to the side when I looked over and saw Nobby, also standing off to the side. Although I knew I'd seen his face, I couldn't quite place it, so finally I walked over and said something to the effect of, "You look really familiar. Have we ever met?" To which Nobby, in what I would learn over subsequent years was typical classic understatement, simply replied, "Maybe, I've been to a lot of races in my life."

Nobby, as I came to appreciate over the time I was fortunate to know him, was one of the most grounded, down-to-earth people one might ever hope to meet, and honest almost to a fault — unique qualities in a sport peppered with larger-than-life personalities. For years I'd hoped that someone would sit down with Nobby, put a tape recorder on the table and get him to share all of the stories of his incredible 50-year racing career, start to finish. That never happened, although in his later years his unique role in motorcycle racing's history was finally being fully appreciated, particularly after his 2012 induction into the AMA Motorcycle Hall of Fame. Nobby's passing won't go unnoticed, with a special ceremony planned at Daytona in March and, I've heard suggested, at the Barber Vintage Festival in October. Rest in Peace, Nobby, you'll be missed.

Richard Backus
Editor-in-chief



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“After blowing it up twice, I sold it.”

Nighthawk fan

I enjoyed your article on the Honda Nighthawk (January/February 2018). A few years ago I was fortunate to purchase a meticulously maintained 1985 Nighthawk from the original owner, which I rode for a couple of years. As the article states it is a very reliable and trouble-free machine. Dave was wise to change the jets as they are pretty cold-blooded, taking several minutes to warm up. I wish I had thought of that. One thing I found that dramatically improves handling is to drop the triple clamps about 3/4 inch.

Steven Boggs/Des Moines, Iowa

Back on the road

This photo is of my 8-month-old grandson Anthony on my 1966 Honda S90. I restored this bike nearly three years ago, largely from a rolling chassis and an engine I found on the ground at a swap meet. It did require some eBay shopping to get it all together. Except for a few cold winter months, I have ridden it continuously as around-town transportation. It generates numerous



You really do meet the nicest people on a Honda. Frank Ravetto's grandson Anthony on Frank's S90.

thumbs up at stoplights and some great stories from people who walk up when it's parked, like the guy who had one as a kid and got his first concussion after falling down when the front fender came loose and rotated around the tire. I had two different guys tell me they had one while serving in Vietnam. One guy said he was sure glad it was reliable as it often got him back to the base just in time for curfew. These are great little bikes and probably the reason why Honda is still here

and BSA isn't. Full disclosure: I also restored and ride a 1970 Triumph Bonneville.

Frank Ravetto/Prescott, Arizona

An early Benly

I was impressed by the article on the Benly JC58 (November/December 2017). Honda made a wide range of 2-wheeled vehicles before they started exporting to North America, and I've seen nothing about any of their stuff from those ancient times in any publication. More, please!

Something else I didn't see was any reference to the least glamorous aspect of the Guzzi V7's origin: The first application of their 90-degree V-twin was for the “Mechanical Donkey,” a three-wheeler for the Italian army. There's a photo or two on the internet if you dig: it's truly aesthetically deprived.

Mel Kennedy/via email

The famous Featherbed

I have devoured each issue since the first one showed up at Barnes & Noble years ago; an amazing number of juicy articles every time. Thanks for

RIDERS

Rider: Steve Anthes, Malo, Washington

Age: 68

Occupation: Retired media producer

Current rides: 1982 Honda FT500 Ascot, 1984 Honda Gold Wing GL1200 Standard, 2003 Honda Nighthawk 750

Steve's story: “I'm retired, with a lot of time on my hands and cautious not to drive the wife nuts, so every year I find a project bike on Craigslist and make it my winter project. After seven projects, I thought I was done with this phase of late-life crisis, so after finishing refurbishing and selling a 1971 Bultaco Matador, I started looking for a bike ready to ride. I was thinking of a Kawasaki KLR650, but changed my mind when I saw the headline of an ad for a '1982 Honda Ascot in mint condition.'

“A couple of pictures from 10 feet out looked good to me, and the ad said ‘in showroom condition.’ Excited, I called the seller, who told me he wasn't into motorcycles and the Ascot had sat for 12 years in his garage. We all know how emotions and motorcycles make for irrational decisions, but I couldn't



Steve's gorgeous 1971 Bultaco Matador after refurbishing.

resist an '82 Ascot with 2,000 miles on the clock. I told the seller I wanted the bike, but I live six hours away. He had other lookers and if I wanted the bike I had to pay him up front. So I did something I've never done when buying a bike ... a few clicks of the mouse on PayPal and the bike was mine.



Jim Bottomley's Honda NT650 Hawk track bike. Some bikes have a soul.

On track

I loved the recent issue of *Motorcycle Classics* (January/February 2018). That nice Honda NT650 Hawk reminded me of one of my favorite rides. I turned my Hawk into a track bike and rode three dozen track days with it, although as I progressed I encountered persistent cooling problems, even with a Ninja radiator. After blowing it up twice, I sold it and moved to a Suzuki GSX-R600, which had stunning performance but lacked the Hawk's soul.

Jim Bottomley/via email

mentioning the Continental Classic Attack tires for your Laverda awhile back. My BMW R80 was also transformed, I wouldn't know they existed otherwise. A tiny complaint with the November/December 2017 issue: What is it like to RIDE the last featherbed Norton? Still, another perfect issue!

Reid Miller/via email



Mike Taint's green BMW R75/5.

Another green BMW R75/5

In a local bookstore here in Ohio, I saw this interesting-looking magazine called *Motorcycle Classics*, so I picked up a copy. Imagine my surprise when I saw the editor has the exact same bike as mine — the only other one I've ever even heard of!

Mike Taint/via email

That makes two of us, Mike, because I'd never seen another one either. BMW called the color simply Metallic Green, and apparently it wasn't very popular in the U.S. Glad you found us! — Ed.



Guzzi fan: Lloyd Gloekler's 1968 Moto Guzzi V7.

Smooth operator

Great article on Paul Harrison's 1967 Moto Guzzi V7 (November/December 2017). The V7 has truly defined Moto Guzzi in the half century following the V7's introduction, and a tip of the hat to Paul for rescuing his from the trash bin of history within the crazy time frame he set for himself. The V7/V700 was produced for a very short time, replaced in 1969 with the heavier and bulkier 750cc Ambassador. It is nice to see another one of the early 700s on the road. I had the pleasure of showing my 1968 V7 (serial number 1526) at the *Motorcycle Classics* show during the 2016 Bonneville Grand Prix and can attest to the great ride these early V's afford. They are smooth, with a great rumble and an authoritative, not quick, but steady push from that big torque engine.

Lloyd "Michael" Gloekler/via email



As found: the original picture of the Ascot on Craigslist.

"When I arrived at the seller's, the bike was parked in his driveway. I jumped out of my truck and checked out the bike ... that I now owned. The plastic seat cowl was cracked down the middle. 'Hey, that's not mint!' I said. 'Oh ... didn't I tell you about that?' The tank had some chips, the back brake was

locked on and the engine would only idle and died when I gave it throttle. That's not mint! But, I kept thinking: an '82 Ascot with 2,000 miles ... you'll never find another. So I loaded her up and headed home.

"Once up on the rack I could see the bike had never been cleaned and was put away wet and dirty. The chain barely flexed and was caked with waxy chain lube. I split the chain, cleaned it and the sprockets and got to work on the brakes. The pistons in both calipers were frozen. I've done many brake rebuilds, but this was the worst. It took me days and copious amounts of liquid wrench, compressed air and yanking with pliers to free the last piston. I had to buy one new piston along with new seals and pads. I flushed the tank and sent the carb off for a complete rebuild to Mike Nixon at the Motorcycle Project (motorcycleproject.com). New gas and a rebuilt carb and the thumper was thumping.

"A week after I bought the Ascot I went under the knife for back surgery. This winter I'll strip the bike down to the frame and engine and go through the whole bike doing my three R's: repairing, replacing and refurbishing. Yes, emotions got the best of me buying this Ascot, but I don't regret it. Only made for two years, it's a classic vintage bike and I look forward to not hiding her, but riding her."

Dream machine: 1981-1984 Kawasaki GPz1100

The early-mid-1980s were a period of unprecedented domination of the U.S. motorcycle market by Japanese makers. Britain's motorcycle industry was dead; in Italy, Laverda was dying and Ducati struggled on, seemingly destined for the same fate until rescued by Cagiva in 1985; and Harley was just emerging from its disastrous AMF tenure. BMW offered a viable alternative — but at a premium price.

This was the era of the “UJM” — the Universal Japanese Motorcycle — a naked bike with an across-the-frame, air-cooled, 4-cylinder, double overhead cam engine of around 1 liter, mounted in a chassis that never quite seemed up to the engine's performance potential. These motorcycles were capable of speeds in excess of 130mph, which, just a decade before, would have been racing territory. And they brought with them reliability, quality finish and durability.

In 1981, and facing serious competition from Suzuki's GS1100E, Kawasaki engineers decided that one more stretch of the Z900-based KZ1000 engine would hold the fort until the all-new liquid-cooled GPZ1000RX replaced it in 1985. To gain the extra capacity, bore was increased by 2.5mm, giving 1,089cc versus the KZ1000's 1,015cc. Bigger valves, revised cam timing, a compression boost to 8.9:1 and Bosch-derived Nissan fuel injection increased power to a claimed 105 horsepower (90 rear-wheel horsepower in *Cycle's* test). Taller pistons with shorter rods spun a new, lighter crank, and drive to the two overhead camshafts was now by Hy-Vo chain with slipper tensioners. The transmission was the same as the 1000 — straight-cut gears to a 5-speed gearbox — but the kick-starter was eliminated.

The KZ1000-based frame was strengthened and lengthened by around 2 inches, while the rake increased from 28mm to 29mm, giving a long-ish 60.6mm wheelbase. Two rubber engine mounts held the front of the engine, with a single solid mount at the



rear. The front fork had factory-preset damping only (although air-adjustable for preload), while the rear shocks had five damping settings. Cast alloy wheels (19-inch front, 18-inch rear) were fitted with 10.2-inch triple-disc brakes. And it was the brakes that caused *Cycle World's* testers some concern.

“At low speeds (under heavy braking) the front tire would slew from side to side just before breaking loose ... At higher speeds the front end of the motorcycle would jackhammer, bouncing the front wheel off the ground, which caused the tire to lock ... Stopping distances increased markedly in successive stops as the brakes got hotter, grabbier and harder to control,” *CW's* testers said.

Why the braking issues? *CW* noted that the Kawi's 3.25-inch front tire was narrower than the GS1100 (presumably for lighter steering), while the GPz750-derived brakes were overly aggressive: “With only two fingers on the lever, the front tire can be locked at any speed,” they noted. This was unfortunate, because the big Kawi went well, with standing quarters in just over 11 seconds at 119mph, fastest in its class at the time. And it handled surprisingly well for such a large, heavy (550 pounds curb) motorcycle — although long-range comfort was perhaps lacking.

Getting beyond the brakes, the GPz was highly regarded.

ON THE MARKET 1982 Kawasaki GPz1100/Sold for \$5,800



Kawasaki GPz1100s had a well-earned reputation for reliability, with enthusiastic owners routinely piling on 50,000-plus miles before needing any engine work. Unfortunately, that means that today a lot of them are pretty worn out. Not this bike, however. Sold on eBay for \$5,800, this first-generation GPz1100 was clearly an enthusiast-owned motorcycle. A time-warp machine, the bodywork was in close to perfect condition, with excellent paint and all the graphics bright and clean, including the decals on the fork and the rear brake master cylinder plate. More amazingly, the engine still sported its apparently original black paint, and the black exhaust — impossible to replace — looked excellent, although there were signs of discoloration and minor surface degradation of the headers. The seat was slightly rumpled, but otherwise clean. Mileage was a low, believed-original 12,263. The \$5,800 selling price may seem high at first blush, but considering the bike's excellent condition and the minimal effort needed to make it perfect, we'd call it money well spent.

"What we have here is the answer to the sports rider's dream."

KAWASAKI GPz1100

Years produced	1981-1984
Power	104hp @ 8,500rpm (1983-on)
Top speed	135mph (period test)
Engine	1,089cc air-cooled DOHC 8-valve inline four
Transmission	5-speed, chain final drive
Weight/MPG	551lb (w/half tank fuel)/ 38-52mpg
Price then/now	\$4,399 (1981)/\$2,500-\$6,000

"No bike has better throttle response," CW said. "As the pace picks up on twisty canyon roads, the GPz1100 has a steering quickness and precision ... It is exceptionally stable." But also added, "The seat is firm, not plush ... suspension can't be bothered with absorbing every little bump."

The GPz1100 got a major makeover in 1983, with more power (104 rear-wheel horsepower), Uni-Trak monoshock rear suspension and, perhaps critically, a change of rubber to 110/90 x 18-inch front and

130/90 x 17-inch rear. *Cycle* took the revised GPz1100 to the strip and restored its crown as the fastest 1100 in a straight line, with a standing quarter that broke into the 10s (though the 1983 Suzuki GS1100ES soon equaled that).

Summing up the 1981 version, *Cycle World* wrote: "What we have here isn't just another fast bike. What we have here is the answer to the sports rider's dream." Maybe

so. But in a three-way shootout in 1983, *Cycle* concluded that the best all-around 1100 was still ... the Suzuki GS1100ES. **MC**

CONTENDERS Alternatives to Kawasaki's big-bore GPz1100

1982-1983 Suzuki GS1100E

Suzuki was last of Japan's Big Four into the 4-stroke game, but its 4-cylinder GS bikes quickly became the benchmarks in their class. The GS1100E introduced Cosworth-style 4-valve cylinder heads, known as TSCC, or Twin Swirl Combustion Chamber in Suzuki-speak, with simple screw-and-locknut valve adjustment. Fueling was by four 34mm Mikuni carburetors, with sparks provided by transistor ignition. Below, the familiar bulletproof roller-bearing crankshaft drove the 5-speed transmission by helical gear with chain final drive.

The sturdy steel tube frame used a box-section alloy swingarm for extra rigidity. Up front, an air-assist Showa fork with "anti-dive" used hydraulic pressure from the front brake. The triple-disc brakes used floating calipers. Overall, testers liked the 1100: "This GS is the most comfortable, best handling big street bike money can buy," said *Cycle* in 1982. The GS1100E was good enough to be named *Cycle World's* Superbike of the Year for three consecutive years from 1981-1983, and its combination of sub-11-second quarter-mile times, nimble yet stable handling, long-distance

touring comfort, simple maintenance and bulletproof reliability contributed to the GS1100E's position as fifth "most significant motorcycle" from the previous 35 years by *Rider* magazine in 1999.

- 1982-1983
- 108hp @ 8,500rpm (claimed)/140mph (period test)
- 1,074cc air-cooled DOHC 16-valve inline four
- 5-speed, chain final drive
- 562lb (wet)/40-50mpg
- \$3,999 (1982)/\$2,500-\$4,500



1983 Honda CB1100F

The CB1100F was a stop-gap model sold for one year only while Honda completed development of its liquid-cooled V4s. Essentially a bored-out CB900F (from 64.5mm to 70mm), the 1100F featured a 4-valve double overhead cam engine with a 5-speed transmission, 33mm Keihin "pumper" carbs and magnetically triggered electronic ignition.

With technology from the Euro-market CB1100R, the 4-valve engine produced a claimed 108 horsepower at the crank, and was packaged in a conventional steel tube frame with a bikini fairing, TRAC anti-dive fork, cast alloy tubeless-tire wheels and adjustable handlebars. Wheels were 1 inch smaller than the 900, using 18-inch front and 17-inch rear, reducing the seat height by a half inch.

The CB1100F offered similar performance to the GS1100 and GPz1100 (top speed was better than the GS, although the GS would beat it in the all-important quarter mile), but it was also less expensive at \$3,698 against \$4,499 for the GPz and \$4,350 for the GS1100ES in 1983. Said *Cycle Guide* magazine, "You might be tempted to call the CB1100F the performance value of the year ... a brilliantly conceived and executed motorcycle, capable of outperforming most of the riders lucky enough to swing a leg over one."

- 1983
- 108hp @ 8,500rpm (claimed)/144mph (period test)
- 1,062cc air-cooled DOHC 16-valve inline four
- 5-speed, chain final drive
- 580lb (wet)/35-45mpg
- \$3,698/\$3,500-\$6,000



The Ride 'Em, Don't Hide 'Em Getaway, 2018 shows and new Royal Enfields

3rd Annual Ride 'Em, Don't Hide 'Em Getaway

The **3rd Annual Motorcycle Classics Ride 'Em, Don't Hide 'Em Getaway** at Seven Springs Mountain Resort in Seven Springs, Pennsylvania, is set for Aug. 10-12, 2018. Following up on the great time we had with the first two events, we're returning to Southwestern Pennsylvania's Laurel Highlands for another perfect weekend of riding and relaxing.

The goal for the weekend is pretty simple: hang out with cool people, ride great roads, eat well and share our mutual love of old bikes. Last year's event drew 53 riders to Seven Springs Mountain Resort, including riders who joined Joel Samick at RetroTours for a back-road romp from the RetroTours headquarters in Kennett Square, Pennsylvania, to Seven Springs. Last year's ride took us south to the tiny burgh of Grantsville, Maryland, where we stopped for lunch after threading our way through the area's beautiful and mostly unknown Amish farm country on roads regularly populated by horse-drawn buggies and their Amish occupants.

Our post-lunch ride took us back north and over the 3,213-foot summit of Mt. Davis, the

highest point in Pennsylvania. The day ended back at Seven Springs, where we had a great banquet dinner with special guest Mark Mederski, special projects director at the National Motorcycle Museum in Anamosa, Iowa, and former executive director of the AMA Motorcycle Hall of Fame. Sunday morning found us back on our bikes, with a great run on seemingly abandoned back roads carving through the Laurel Highlands. This is truly stunning territory, a mixture of woods and open farm land punctuated by broad ridges and sudden valleys of idyllic farm land, with ribbons of two-lane black top slicing through it all.

RetroTours (retrotours.com) will once again offer rental bikes from its stable of classic '70s twins, and if you're looking for more adventure link up with them for a round-trip run from Kennett Square for the event. We're still working on this year's route and special guest, but you can count on another special weekend filled with great people, great food and great riding. It doesn't get much better than that. For more information and to reserve your spot, go to MotorcycleClassics.com/PA2018



The 3rd Annual Ride 'Em, Don't Hide 'Em will be Aug. 10-12!

Show time: Motorcycle Classics 2018 vintage bike shows

The 2018 show season is fast approaching, making this the perfect time to start making plans to join us at our favorite annual events.

First up is the annual **Vintage Motofest, June 8-10, 2018**, at Road America racetrack outside Elkhart Lake, Wisconsin (roadamerica.com), featuring AHRMA vintage racing and the Rockerbox Bike Show. The bike show happens Saturday, and we'll be there heading up judging and awarding, bestowing the *Motorcycle Classics* Editor's Choice award along with trophies for the top bikes in five other categories. Nicknamed "America's National Park of Speed," Road America

is one of the most historic tracks in the U.S., if not the world. The AHRMA racing on the 4-mile, 14-turn road circuit is spectacular, plus there's live music, a Saturday microbrew tasting, and an opportunity to

lap the track on your own scooter Saturday. If you've never been, this is the time to go. More details on Page 31.

Two weeks later we'll be in Chicago, Illinois, for the **Motoblot Urban**

Motorcycle & Hot Rod Street Rally, June 22-24, 2018. First held in 2014, Motoblot (motoblot.com) has rapidly grown into one of the largest vintage motorcycle, scooter and hot rod rallies in the U.S. A street show with a great urban vibe, it draws bikes from across the region and the U.S. for a great weekend of live music and cool bikes. *Motorcycle Classics* will sponsor the Motoblot Vintage Bike Show, with a special Editor's Choice award and trophies in



Royal Enfield is jumping into new markets with its first twins, the 650cc Continental GT650 and Interceptor (right), and the 411cc single-cylinder Himalayan adventure bike (below).



Royal Enfield ramps it up

Proving the company is serious about dominating the mid-capacity market (bikes of roughly 400cc to 750cc), India's Royal Enfield (royalenfield.com) has launched a trio of new machines headed this way. The first of the new machines to roll out was the Himalayan, which was introduced in 2016, an all-new single cast in the adventure bike mold. Sharing nothing with RE's venerable line of singles like the 500cc Classic and the 535cc Continental GT, the Himalayan is a clean-sheet design. Starting is electric only and the engine, a 24.5 horsepower 411cc single and RE's first overhead cam design, features unit construction and a 5-speed transmission. Fuel injection and electronic ignition are featured, along with disc brakes front and rear. Expected to sell for around \$4,500 when it finally goes on sale here in the U.S. in mid-2018, the Himalayan represents a serious challenge to many of the Asian lightweights and an excellent option to the popular but huge and heavy liter-plus adventure bikes from BMW and others.

Royal Enfield stirred things up even more at last November's 2017 EICMA Motorcycle Show in Milan, Italy, where it introduced a pair of new twins, the Interceptor 650 and the Continental GT 650. Variations on the same theme, both bikes are



powered by yet another clean sheet design from RE, this time a 47 horsepower air/oil-cooled 648cc overhead cam 4-valve per cylinder twin. Designed to look like a traditional pushrod engine, the new twin even features cylinder finning to further evoke an image of days gone by. Fuel injected and electronically sparked, the new engine features a 6-speed transmission with a slip-assist clutch, a first for RE. Designed in RE's U.K. tech center, both bikes harken back to a British past, but using modern technology. The Interceptor — a name last used by RE England back in the '60s on its big twin — is a standard-style machine cut much in the mold of a Hinckley Triumph Bonneville T100. The Continental GT650, on the other hand, is the café racer of the pair, a hip-looking machine with styling cues pulled from the current single-cylinder Continental GT. Frankly, we think both bikes look fantastic and we can't wait for the opportunity to swing a leg over one. Expect both machines to be priced somewhere in the \$5,500 to \$7,500 range.

Now the world's largest volume manufacturer of two-wheelers, RE is aiming for a production capacity of 900,000 motorcycles in 2018. Fully 96 percent of RE sales are in India, making the U.S. and other overseas markets, still poorly served in terms of mid-capacity bikes, potentially huge hunting grounds.

six other categories. The Motoblot Film Festival runs all weekend, and there's a beer hall, plenty of food trucks and vendors galore. Definitely not to be missed.

Two weeks after Motoblot we'll point our scoots toward Lexington, Ohio, and the Mid-Ohio Sports Car Course for **Vintage Motorcycle Days, July 6-8, 2018**. The granddaddy of all vintage motorcycle events, VMD has been mecca for vintage motorcycle fans since its founding in the mid-1990s. Regularly drawing crowds of 40,000-plus, it's second only to the Barber Vintage Festival in size and scope. Vintage racing fills the weekend, with riders competing on the 2.4-mile Mid-Ohio track in the AMA Vintage Grand Championship and out in the field in great motocross, hare scrambles, trials and dirt-track racing. VMD also hosts the largest swap meet in North America, covering some 35 acres! The amount of vintage gear being traded boggles the mind:

If you're looking for that last obscure part to complete your restoration, chances are good you'll find it at VMD. We don't have a final schedule yet, but look for the return of the *Motorcycle Classics Ride & Show* on Saturday, July 7. This is truly one of the greatest events of the year, and as always, proceeds from the event benefit the AMA Motorcycle Hall of Fame. More info at amavintagemotorcycledays.com

Labor Day weekend will see us heading west to the Utah Motorsports Campus in Tooele, Utah, for the **13th Annual Bonneville Vintage GP, Aug. 31-Sept. 2, 2018** (bonnevillevintagegp.com). As always there's great AHRMA racing, plus the ever popular Battle of the CB160s LeMans Start at noon on Saturday and Sunday. We'll host the annual *Motorcycle Classics* Vintage Bike Show, with trophies in five classes including awards for Best Restored and Best Rider in each class. Top tip: Come early for the 2018 Bonneville

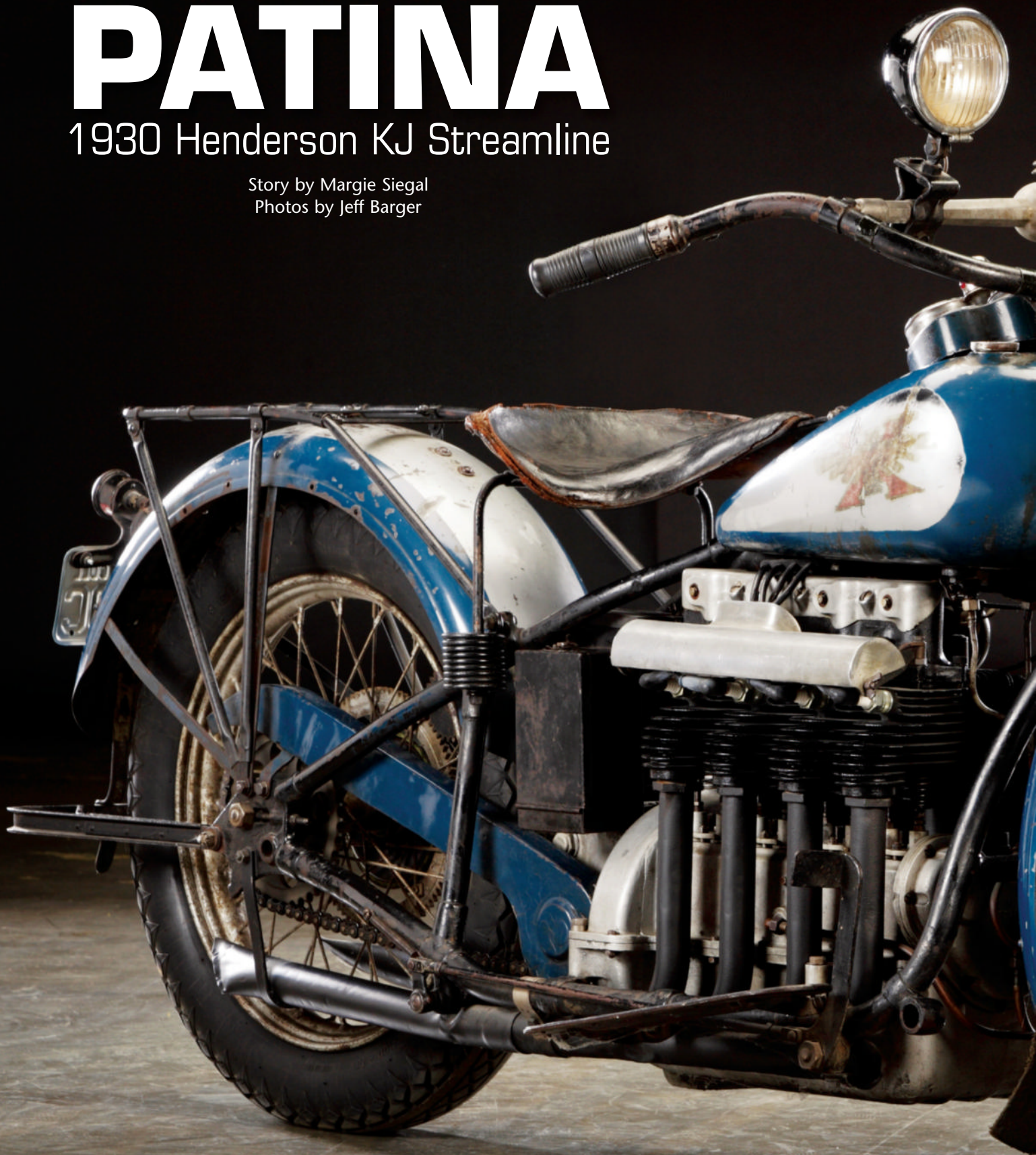
Motorcycle Speed Trials (bonneville-speedtrials.com) at the Bonneville Salt Flats, Aug. 25-30, for an experience you'll never forget.

Rounding out our year is the **14th Annual Barber Vintage Festival, Oct. 5-7, 2018** (barbervintagefestival.org). This is the single largest vintage gathering in the U.S., with attendance breaking 70,000-plus the past few years. We'll hold technical seminars Friday and Saturday, with the *Motorcycle Classics* Barber Vintage Bike Show on Saturday. We'll finish off the weekend with our Sunday Morning Ride, a leisurely run through the beautiful Alabama countryside. There's also great AHRMA racing on the incredible 2.4-mile Barber track, and the excellent Barber Swap Meet returns, as does the Ace Corner, the Century Parade for bikes 100 years old and older, the Globe of Death stunt show and much more. We'll post more info as it becomes available. Don't miss it! **MC**

PATINA

1930 Henderson KJ Streamline

Story by Margie Siegal
Photos by Jeff Barger





"Motorcycle racing in this country, according to a well-known sports writer, is kept alive and supported principally by the county speed cops. When the A.M.A. or some other organization sponsors a motorcycle race, a trick riding contest or a hill climb, the experienced officer-riders are on the spot." — The Blue Book of Sports, 1931

At that time, a high percentage of those motorcycle officers would have been riding Hendersons. In the 1920s and 1930s, the Henderson, a sturdy, quiet and fast machine (by the standards of the day) was a top choice of police departments all over the U.S., and there weren't many cars on the road that could outrun one. In recent years, Hendersons have shone on the Cannonball coast-to-coast rally for vintage motorcycles, frequently winning and placing high in the points rankings, underscoring the fact that a Henderson is one of the most user-friendly and reliable bikes of its era.

This original 1930 Henderson KJ — unrestored, running, and in amazingly good shape for an 87-year-old machine — probably started out as a police bike. The decals are consistent with motorcycles manufactured for traffic cops, and among its accessories is a "hand control" speedometer, with two hands, one of them red. Lacking radar, the motor cop would match speed with the boat-tailed Auburn or Duesenberg that was burning up the road, hit the button, and the red hand on the bike's speedometer would set at the maximum speed. The cop would then pull the offender over and write down the indicated speed on the ticket.

The KJ Streamline

William Henderson designed the inline four motorcycle bearing his name, running the Henderson Motorcycle Company with his brother Tom from its beginning in 1912 until 1917, when the company was purchased by Ignaz Schwinn — the same Schwinn that built the bicycle you had when you were 10 years old. Schwinn reworked the original Henderson design to make it more attractive to police departments, a major source of revenue for motorcycle factories at the time. The redesign, with a sidevalve top end instead of the original inlet-over-exhaust design, was more reliable, but much heavier. Disappointed with Schwinn's development of the Henderson, William left to start another motorcycle company, Ace, but the new Henderson was embraced by motor police and the company prospered through the 1920s.

Henderson, like many other American motorcycle factories, also had a big export business. Large-displacement motorcycles were mostly an American product, and enthusiasts in Europe, South Africa, Canada and Australia looking for bigger machines imported them from the United States.

In 1928, Schwinn hired Arthur Constantine as new chief engineer. Constantine, who had previously worked for Harley-Davidson, began working on a new version of the



1930 HENDERSON KJ

Engine: 79.4ci (1,301cc) air-cooled IOE F-head inline four, 2-11/16in x 3-1/2in bore and stroke, 4.4:1 compression ratio, 40hp at 4,000rpm (claimed)

Top speed: 100mph (claimed)

Carburetion: Single Schebler

Transmission: 3-speed handshift, chain final drive

Electrics: 6v, magneto ignition

Frame/wheelbase: Dual downtube cradle frame/58in (1,473mm)

Suspension: Trailing link double leg springer forks front, rigid rear

Brakes: Drum front, contracting band rear

Tires: 4 x 19in front and rear

Weight (dry): 440lb (200kg)

Fuel capacity: 4gal (15ltr)

Price then/now: \$435/\$20,000-\$60,000



Henderson, which was then getting a little long in the tooth. In an interview with Ted Hodgdon, the author of *Motorcycling's Golden Age of the Fours*, Constantine explained that he wanted a lower and more central riding position, more horsepower and smoother running, as well as greater reliability. The result was the KJ "Streamline" model. Produced from 1929 until 1931, the KJ sold for \$435 (about \$6,000 in 2017 dollars) and was claimed to be capable of reaching 100mph.

The KJ's 79.4-cubic-inch (1,301cc) engine had four inline cylinders like its predecessors, but was improved with a five-bearing crankshaft, increased fin area, and a new valve cage design with overhead inlet valves. Inlet over exhaust valves

might be thought to be a retreat from the prior sidevalve valve design, but it worked with a newly designed intake manifold to enable down-draft carburetion, of a sort: The carburetor is a side-draft, but the intake manifold feeds the fuel/air mixture downward into the cylinders.

The engine developed 40 horsepower at 4,000rpm, compared to the 30 horsepower made by a contemporary Harley VL sidevalve (base price \$340). Not only was the Henderson more powerful, but it produced its power quietly, with minimal vibration, unlike the noisier and vibration-prone Harley. The Henderson's 3-speed handshift transmission could be ordered with a reverse gear, a handy option for the commercial sidecar





The 3-speed transmission is controlled with a hand shifter on the left side of the fuel tank. The paint is original.

outfits that were then common inner city delivery vehicles.

Cycle parts on the KJ included wide fenders, 19-inch "safety" (drop center) rims, 4 x 19-inch tires, a larger front drum brake, and a redesigned front fork, all melded into a new streamlined look. The instrument panel on top of the tank boasted a speedometer, an ammeter and an oil gauge. The standard color was dark blue, although maroon and green were available on special order. Shortly after the advent of the KJ in April 1929, Henderson announced the KL, with more horsepower and a top speed of 110mph.

Although the KJ and the KL were selling well, there were dark clouds on the horizon. The October 1929 stock market crash and its aftereffects were eating the American economy. At the same time, the British Commonwealth exponentially increased tariffs, killing the Henderson's major overseas markets. And while the Henderson was a better police bike than its competitors, it was also more expensive, a factor that belt-tightening municipalities had to consider.

On top of all of that, Ignaz Schwinn was getting old. He liked motorcycles, but his sons, poised to take over the company when Ignaz retired, did not. In the summer of 1931, Schwinn called the Henderson (and sister company Excelsior) department heads together for a meeting, and with no warning told

them, "Gentlemen, today we stop." Despite a full order book, Schwinn decided to pare back to his core business, bicycle manufacture, in order to better survive the developing economic depression. By September 1931, the Henderson factory had shut down.

Paul Woelbing's Henderson

Henderson built a lot of bikes over the years. Riders who liked their Hendersons hung on to them, while other riders, looking for inexpensive and reliable transportation, bought retired Henderson police bikes, like this KJ. Although not built in the numbers of, say, Harley-Davidsons, Hendersons are not exactly rare, and our feature bike is only unusual for its unrestored good condition. At some point in its history, this KJ was bought by two brothers in the Bronx who ran a window replacement business. For some reason, they parked the Henderson in a semitrailer they owned, and then started throwing scrap glass into the truck. When a collector located it, the KJ was in the back of the old semitrailer, covered with broken glass. This collector extricated the bike (very, very carefully) and cleaned it up, but otherwise left it as it was. Some years later, needing to raise college funds for his daughter, he sold the bike to Paul Woelbing.

Riding and maintaining a Henderson today

Well-known American vintage bike enthusiast and restoration expert Matt Olsen (carlscyclesupply.com) has extensive experience riding and repairing Henderson KJs. He points out that KJs have many features that make them safe, reliable bikes. "A KJ has a front brake, wheels with drop center rims, and a comfortable riding position. The problem with most Hendersons is poor maintenance over the last 80 years. The

first and second owners probably took care of the bike, but by the fifth owner, who knows." Matt says that the key to a trouble-free Henderson is to have the engine properly rebuilt.

The brakes, which have been a sticking point on Paul's bike, can be made to work. "You glue on a new brake lining — there are several different shops around the U.S. who can do this — and match the brake drum to the lining.

The key is parallel contact, all the way around. The back brake is a band brake, on the outside of the drum. After 80 years, the drum gets worn out, and is full of hills and valleys. The fix is to weld on a new sleeve, and fit the band to the drum. With a good brake lining, you can lock up the rear wheel," Matt says. "A Henderson, despite its long wheelbase, is surprisingly nimble and agile. They handle very well for their age."



Paul, of Franklin, Wisconsin, comes from a long line of bikers, including a grandmother who owned a Harley single. "I still have her black leather jacket," Paul says. His father had a 1948 Cushman and, for something different, a 1937 Harley-Davidson Flathead. However, Paul didn't get really excited over a motorcycle until he drove by a Harley dealer and saw a turquoise and cream Sportster. "My folks bought it for me as a surprise." Scientists are still working on cloning Paul's parents.

After four months riding around on the 1992 Sportster, Paul got Bigger Bike-Itis and ended up with a 1992 Harley Springer. He also started collecting vintage bikes. "I found a 1948 Indian Chief, and that was just the beginning." Paul explains that his parents collect 18th century furniture, and he grew up appreciating antique patina, one of the things that endeared him to this KJ. "The Henderson is a cool bike. I learned the value of an original finish from my parents. The vintage patina really speaks to me."

When the bike was first delivered it was dusk, but Paul was excited, and wanted to go for a ride. The rear light was burned out, the headlight wasn't working and Hendersons don't have a brake light, so Paul taped a flashlight to the handlebars and asked a friend to ride behind him to be the brake light for both. The Henderson ran, but sounded a little ragged. The brakes were worn to scraps of fiber around the rivets and Paul had to drag his feet at stops. The wheels were sound, which is unusual, as many Hendersons that have surfaced have wheels that are rusted out and have to be replaced. He decided that if he was going to ride the bike, it might be a good idea to

improve the engine and running gear. He asked Ken Preston, a well-known old-bike mechanic, to sort out the engine and the brakes.

In the meantime, Paul called Henderson expert Dick Winger and described the bike to him. Winger told him that the decals and the bar on the handlebars with extra lights were consistent with police use. Other accessories that came with the bike were a fork lock (bike theft was a problem then, just as it is now) and a Klaxon horn for that great "ah-oo-gah" sound.

Paul rode the bike on a regular basis for a couple of years, mostly on short local trips around his neighborhood, "an ice cream getter," he says, noting the Henderson "has a very unique sound," likening it to a Massey Ferguson tractor. He finally decided to pretty much park the bike in favor of riding the twins from his collection. At the moment, the KJ sits in Paul's office at work.

Paul says the Henderson has lots of power for an oldster, and that it is very easy to start. However, when you first get going, the clutch sticks. "You have to duck walk it to get moving, it kind of needs a running start. But once it gets going, the clutch isn't a problem."

One of the issues riding a bike this old is maintenance. "Most vintage bikes don't have oil filters, so I change the oil frequently, every 500 miles," Paul says. "Henderson fours have a large crankcase that looks somewhat like a small automobile engine. The oil lubricates the transmission and engine. My brother flies World War II vintage airplanes, so from a source he uses I purchased a barrel of AeroShell 80 weight oil, which I

"Most vintage bikes don't have oil filters, so I change the oil frequently."

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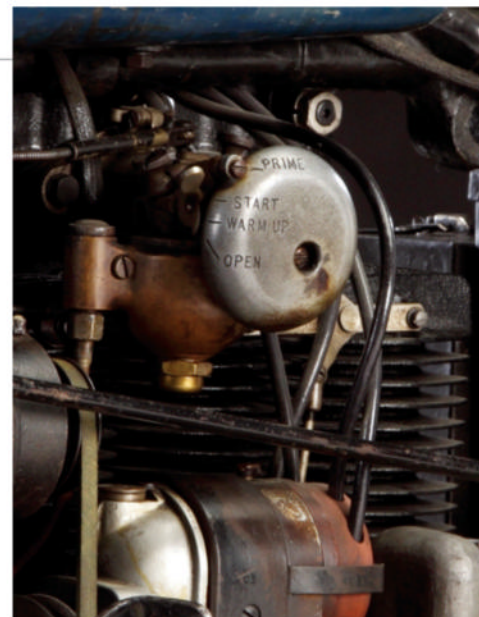
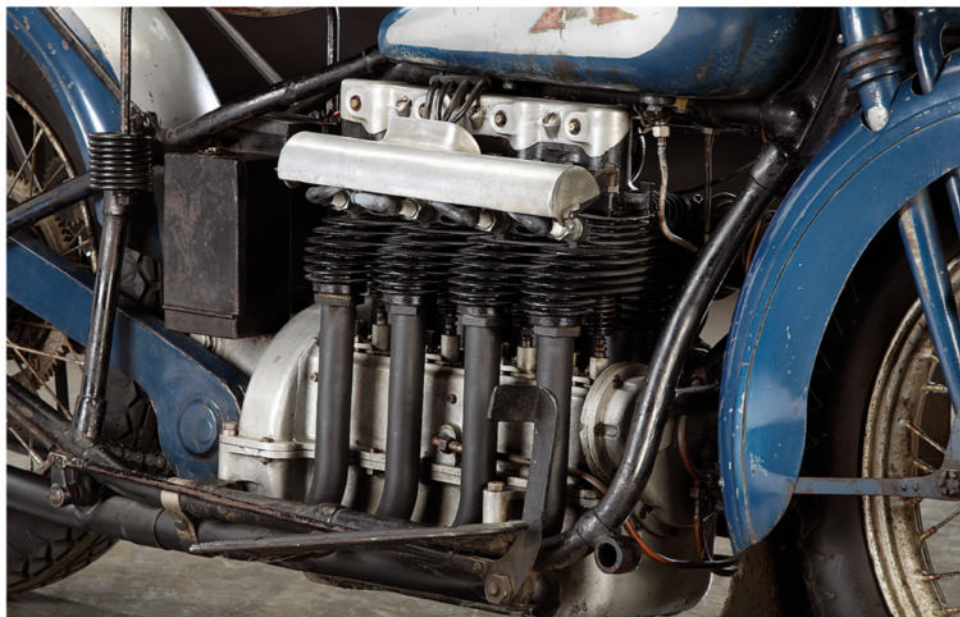
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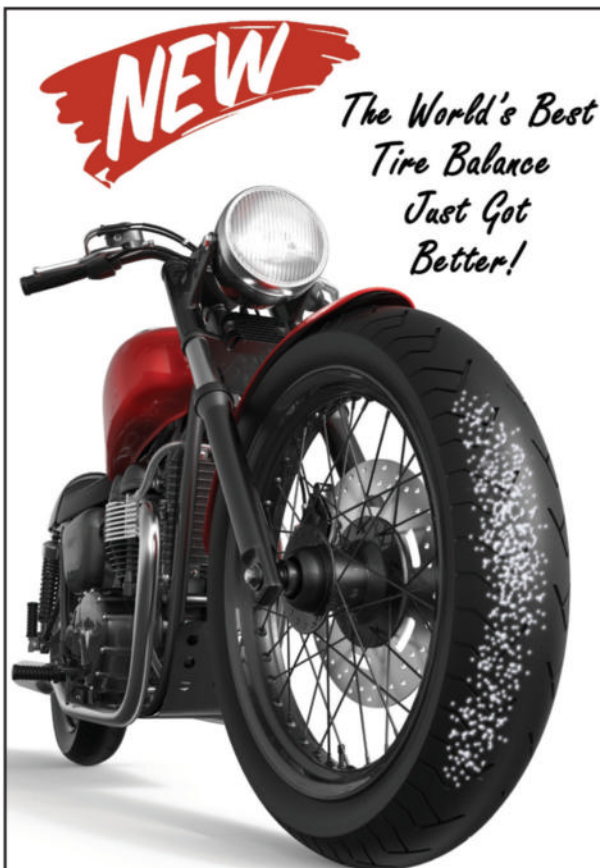
The 79.4-cubic-inch engine makes 40 horsepower. The carburetor has four choke settings marked on its side (right).

believe translates into SAE 40 weight car/bike oil. I also always add Marvel Mystery Oil to the gas to help lubricate the valves on any vintage motorcycle, regardless of the brand."

Like almost all bikes of this vintage, Hendersons don't have positive lubrication to the overhead valves, which need to be greased at regular intervals. "At the same time I change the crankcase oil, I remove the top cover and use a popsicle stick to grease the valve train." One chore that once had to be done on a regular basis — decarbonizing the cylinders — is now rarely necessary. Present-day oils do not have the amount

of carbon that 1930s oil did. By the end of a year's riding, or possibly sooner, depending on the amount of dust on local roads, the cylinders, pistons and valves would be coated with carbon, and performance would suffer. Contemporary rider's manuals have elaborate instructions for removing carbon from the top end.

Despite the fact that the Henderson has no rear suspension, it is a surprisingly good handler. "I never pushed it past its limits. The fastest I ever rode it is 55mph. The front end is a little light, and I don't completely trust the brakes," Paul says. **MC**



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IT DON'T COME EASY

Half prepared but all in, three friends set off on a 350-mile-long California vintage dirt-bike tour — with a motocross race as the finale. Welcome to Vintage Tour Cross.



Story by John L. Stein
Photos by Seth DeDoes

"I've been a puppet, a pauper, a pirate, a poet, a pawn and a king," sang Frank Sinatra in *That's Life*. The same might apply to my motorcycling career, thanks to a longtime interest in vintage dirt bikes, street bikes and road racers, modern superbikes and motocrossers, and even touring. With such schizophrenic tastes, sometimes it's hard to know what to pursue next. Last year I decided to combine three longtime loves — vintage enduro bikes, touring and motocross — into one grand adventure. "Vintage Tour Cross" was born.

The plan was simple enough: Aboard a 1969 Suzuki TS250 Savage, a 1971 OSSA Pioneer 250 Enduro, and a 1975 Honda XL350, we'd load up Aerostich saddlebags, backpacks and sleeping bags, and ride 350 miles over two-lane backroads from Santa Barbara to Hollister, California, where the 21st round of the AHRMA Vintage Motocross championship would be held. We'd then camp in the pits and race the vintage national on Sunday. Unprecedented? Yes. Unlikely? Sure. But we wanted to try.

Volunteers included 10-time car racing national champion and avid motorcyclist Randy "The Rocket" Pobst; his friend Deborah Inskeep, a marine biologist and sport bike enthusiast; and racing photographer and rock climber Seth DeDoes, following in a Ford F-250 Super Duty pickup with his camera gear, tents, and some

gas, oil and tools. With some 500 car races to his credit, Pobst had just one motorcycle event under his belt. And Inskeep had never ridden in the dirt. Like challenges much?

The bikes

Randy's Suzuki was stock and nearly all there, until close inspection uncovered mousy wiring, a horn that intermittently bleated on and off, nonfunctioning turn signals, an inoperative tachometer, a gummed-up carburetor and, worst of all, much piston slap. But it showed just 4,100 miles on the odometer, and after a carb rebuild it started, idled, ran and shifted through the gears fine.

My beloved OSSA was essentially fit for duty, except for a questionable charging system and the possibility that the Spanish fiberglass tank — coated several years ago with Caswell — would start seeping anew on the long road ride. Even after 46 years, the venerable Pioneer had gone only 2,800 miles.

And Deborah's Honda? Well, just like a Honda, everything worked, including the lights, fork lock and turn signals. After cleaning the carburetor, Randy had turned it into a real pussycat. With just 2,950 miles on the clock, the XL350 was eager to go.

The bikes' tires were OK for a road ride, but not for the Hollister motocross. On an MX track, nothing helps more than fresh, square-edged knobbies, so I fitted new Dunlop tires to the 2-strokes. With Deborah new to dirt bikes, we carried her Dunlops in the truck to install them upon arrival at Hollister, giving her the security of the Honda's more street-oriented tires on the two-day tour. Lubricants were changed to fresh Lucas Oil products and new Regina drive chains were rolled on. As the *piece de resistance*, FastLane MX prepared some customized numbers, which I applied to standard 9 x 11-inch oval plates attached with simple aluminum bracketry. Suddenly, our otherwise standard vintage enduros looked like bona fide ISDT bikes. So cool!





When a lighting coil packed up, it was time to get resourceful (left). A LED flashlight with the OSSA's taillight lens taped on had to do. Randy Pobst aboard the 1969 Suzuki TS250 Savage, loaded and rolling (right).

Slow out of the gate

Our 8 a.m. planned departure morphed into 1 p.m. as our group assembled, sorted through riding gear, packed up the chase truck and bungee-corded sleeping bags and gear onto the bikes. Finally on the road, I felt a surge of emotions: excitement to be underway on a unique trip; anxiety about possible mechanical problems; and worry about being behind schedule. Fortunately, the first leg from Santa Barbara to the mountain town of Ojai was uneventful. So far, so good!

The first challenge was climbing Pine Mountain above Ojai, a nearly mile-high summit that tested both power and stamina. All three bikes made it without complaint, but as the sun set behind the Cuyama Valley, and the temperature likewise dropped to "shivering," it was clearly going to be a long ride to our intended overnight stop in Coalinga, a 202-mile day.

Dusk and deeper cold arrived as our group gamely turned onto SR 166, heading for the little town of Maricopa. There was

zero need for discussion. We all knew where we were, what time it was, how far behind we were, how far we had to go, and what the temperature was. So we kept going. That resolve proved that exactly the right people had signed on for the trip.

As darkness arrived, so did the first mechanical problem: a no-go OSSA headlight. Pulling into a truck brake-check area, I dug out a voltmeter, spare fuses and patch cords, and tracked the circuitry back to the magneto, whose lighting coil was producing no useful electrons.

The solution? Two ultra-bright flashlights, including a six-cell Maglite up front and a two-cell LED unit, with the OSSA's taillight lens taped over it, in back. Amazingly, the result nearly equaled the Pioneer's 6-volt OE lighting, and we proceeded northward to Taft, countering the cold by doubling up gloves and tripling up other layers. Some hot Mexican food in a wonderfully lumpy, naugahyde-upholstered local diner completed our abbreviated day one — 112 miles — in style.

Three enduros, three sleeping bags, a little bit of gear and the open road. What more can you ask for?





Down one rider, and on the best road of the trip no less: The views from SR 198 and 25 are nothing less than bucolic (left). Author John L. Stein aboard his 1971 OSSA Pioneer 250 (right).

A Savage meltdown

Sunup brought a glorious sight — cloudless skies, and our three vintage enduro bikes parked side by side, two with their Dunlop knobbies freshly broken in, bugs nicely splattered across all three front number plates, and chain lube and exhaust streaks already covering the back ends. After a quick breakfast, we refueled, repacked and remounted for the longest day of our trip — over 220 miles north to the Hollister Hills State Vehicle Recreation Area, home of the motocross national.

The day started great, riding with our backs to the sun, soaking up the day's growing warmth and clicking off the miles. If you like gritty vistas, ride SR 33 north from Taft sometime: Mile after mile of pumping oil derricks, dirt roads, oily pipelines, service trucks and tumbleweeds — it's all here, just like a scene from John Wayne's *Hellfighters*.

And it's also where real bike trouble found us, as the prolonged high speeds brought the death of the Savage's top end as the engine slowed, soured, and then lost power altogether. Randy coasted to a stop on a dirt turnout, and Deborah and I circled back. Alarming, the TS250 had no compression, and the kickstarter turned uselessly as the piston slid up and down in the bore. ¡No bueno!

Tools we had, duct tape and wire we had, spark plugs and spare oil and gas we had. But we didn't have a piston kit for a 48-year-old Savage, so we ceremoniously loaded the Suzuki into the pickup and carried on.

Arriving in Coalinga around lunchtime, we refueled and then set about calculating a Suzuki fix. What greeted us inside the combustion chamber was beyond

disturbing. The entire front of the piston crown was eaten away by detonation. With no parts available, fixing this would require creativity — and a miracle. The local Ace Hardware yielded a \$9 gallon of muriatic acid for dissolving aluminum off the iron bore, and the local auto-parts store produced an adjustable cylinder hone for \$34. Doubtful outcome? Yes. But we were willing to try. We had to try.

The night shift

I'll feel forever guilty that The Rocket missed riding the best part of the trip, SR 198 and 25 from Coalinga to Hollister.

Rising and falling, twisting and turning, and flanked by golden fields and grasslands straight out of Steinbeck's *East of Eden*, the route is 92 miles of bucolic beauty.

The sun ducked behind Hollister Hills as we finally pulled into the campground, where we found a gypsy park full of like-minded souls, their CZs and Pursangs, BSAs and Greeves stationed like sentries guarding tents, trailers and trucks. We quickly located a lovely camping spot under a broad oak tree, but there was no time for dinner. Out of the F-250 came the Suzuki and off came its exhaust pipe, carburetor and cylinder to reveal a worst-case scenario. The cylinder, once a precise 72mm diameter barrel, now carried nasty streaks of aluminum at the exhaust port. The piston was even worse, its crown crumbling, its top ring pinched tight by melted aluminum, and its lower ring literally welded in place.

We swarmed the bike until after 10 p.m., a volunteer from



All hands on deck: After arriving in Hollister, the crew work to remove the cylinder of the TS250.



From top: John racing at Hollister en route to a third place finish; Randy (front) and John lined up for the next race. Randy racing the revived TS250.



a nearby campsite doing a great job cleaning up the cylinder with the muriatic acid, the chemical reaction bubbling away the aluminum streak. But the piston was a much tougher save, and I spent two hours with a knife, razor blade, wet-and-dry sandpaper and file, freeing the top ring but then running into a roadblock trying to unstick the lower ring. Ultimately, it just got too late, and with the OSSA and Honda needing only minimal attention to race, we called time on the day. We'd been at it 14 hours.

One star dies. Another is reborn

Up at dawn to the distant sound of a 2-stroke warming up, and the start of one of the most harried classic bike days imaginable. As a team, we wanted just one thing: For all three bikes to line up and race. However, another surprise awaited as I swapped out the Honda's dual-sport front tire for the new Dunlop knobby, and prepared to do the same for the rear. The Honda would not start, for anyone, nowhere, no how. Off came the fuel line to check gas flow, which was fine. Out came the spark plug to check for spark. There was none. Check the switches, check the lights, check the fuse. Still no spark.

Deducing a bad coil, we borrowed the torn-down Suzuki's and tried it on the Honda. Still no spark. We tried jumping directly from the battery to the coil. No spark again. Finally, Bobby Weindorf, the curator at the Moto Talbott Museum and a former Honda factory Superbike mechanic, offered to troubleshoot the bike. His deduction: a bad ignition stator. What had 24 hours before been a mission on track was now a mission in shambles, with the two Japanese bikes dismantled in our campground and the Spanish machine running fine. Was this a *Mad, Mad, Mad, Mad World*, or what?

This next part is too incredible to believe, but I swear it's true. The previous night, a visitor casually mentioned that an early Honda Elsinore piston directly interchanges with the TS250's. On a whim, we relayed this to event officials first thing on race morning, and they made an appeal — for either piston — in their morning briefing. Appreciative of the gesture, I thought nothing more of it, and had put both the Honda and Suzuki out of mind as I lined up for the first moto on the OSSA. It ran great, and after a race-long battle up from mid-pack, I finished competitively in third place. Ecstatic with this result on a stock bike that had just toured 350 miles (and was still wearing its lights, license plate and muffler!), I returned to the pits, took off my helmet — and spied a small box in between a power drill and a loaf of bread. It said "Wiseco" and "CR250" on it.

"Where did this come from?" I asked. Randy knew. "A guy named Stan Clayton brought it by," he said. "His son James heard the announcement at 7:30, called home and woke up his wife, and asked her to go to the

Deborah Inskeep aboard the TS250 competing in her first motocross race, having never ridden in the dirt.

garage and get it," he explained. "She then drove it to the track and Stan walked it over here. He refused to take any money for it."

In the box was indeed a new standard piston for an early Elsinore, plus a pair of rings. But would it really fit the Suzuki? I grabbed the cleaned-up cylinder, inserted the piston ... and they fit together perfectly. The Suzuki wrist pin fit the piston as well. Suddenly, we had a solution, thanks to the kindness of Santa Clara Riders Unlimited (the event's host club) and the Clayton family.

The only hiccup was that the Suzuki's needle bearing was too wide to fit inside the Wiseco piston's wrist-pin bosses. With Randy's and my moto coming up fast, I grabbed the drill and a grinding wheel, a neighbor fired up his generator, and I clamped the bearing cage with Vice-Grips and had at it. The ad hoc bench grinder narrowed the bearing in short order, and with the top end hastily assembled, the Suzuki started in one swing of the kickstarter. And none too soon, either, as our race was just about to line up.

Finishing is winning

Rolling up to the starting gate with Randy was surreal. It was the climax of a trip we had long discussed, and most especially because just a half-hour before, Randy's Suzuki was a dirty, road-weary bike with its top end torn off. I looked over and yelled, "I told you I would get you to the gate!" But The Rocket wasn't listening — he was staring straight ahead. The gate dropped, and the renewed Suzuki and OSSA lunged ahead, side by side. In one moment, three days of toil and stress, hundreds of miles of travel, frayed tempers and problems ceased to be important. Vintage Tour Cross was real!

Señor Rocket did a great job on track, riding nearly mistake-free and finishing, as he described it later, "Not last! A wide-eyed rookie, I surveyed the line of hardened veterans. Thrilled, scared and excited, I suppressed a loud voice in my head saying, 'What the hay are you thinking? This is totally nuts.' Then the gate dropped and 'Hooweee!' off we went!" The OSSA likewise had another good run, again finishing third for an overall podium in a vintage national.

And then it was Deborah's turn to walk on fire. With the Honda out, we swapped her number plates to the Suzuki, and she rolled to the gate. Incredibly, having never ridden in the dirt, she sparred with two other riders before falling while attempting a pass. She got up and finished though, covered in mud and wearing a huge grin. "I didn't know what was going to happen, but I never thought I couldn't do it," she said later. "So when the gate dropped I went for it, screaming 'C'mon, c'mon!' into my helmet. Even



after things went awry, I just kept working angles until I succeeded. I think that's what we all did."

"Life is sloppy," mused a psychologist friend one time. She was right, of course, but she couldn't have known just how well those three words would suit our crazy, brazen experiment. Yes, it was sloppy. It was also stressful and exhilarating, challenging and frustrating, scenic and beautiful, and in the end, euphoric. But at its core, it was so simple: Three vintage bikes, loaded with gear. Three friends, ready to ride. A long, open road upon which to chase a dream. And then, finally, a race track showdown. All with no guarantees.

Despite all the challenges, the first-ever Vintage Tour Cross turned out almost perfect. My takeaway? When you have a dream, resist overthinking it, or you may never go — or ever truly live. **MC**

Originally published at Hagerty.com



Victory: A trophy for John (left) and successful races run for Deborah and Randy.

TAKING FLIGHT

Howard Boone's Honda 836 CR

Story by Greg Williams

Photos by Jason Wallis

You meet the nicest people on a Honda." It's one of the most popular slogans in the history of motorcycling, and Howard Boone's story validates the claim.

As a motorcycle-mad 12-year-old in Montgomery, Alabama, Howard Boone's first powered two-wheeler was a Honda S90. Howard's parents didn't want him to have anything to do with motorcycles, but when they saw the boxes of parts he'd bought from a neighbor and dragged home they said, "Now, that's a bike you can have."

Obviously, they underestimated young Howard's determination, because he had the project together and running in less than a weekend. He used the small-bore Honda to explore a network of trails that ran through Montgomery and set up a jump that would land him in the Waller Hardware parking lot. The store had been closed for some time and the lot was usually empty, until one day Howard came across a van parked there that was filled with Honda crates.

Moving the boxes were husband and wife team Charles and Virginia Hunter, and Howard clearly remembers his first conversation with one of those proverbial "nicest people." "Virginia asked me, 'Do you know where to get car tags?' Yes, ma'am. 'Do you know where to get fresh seafood?' Yes, ma'am. 'Do you need a job?' Yes, ma'am," Howard recalls. It was 1969, and Howard was the first employee at Hunter Honda on Atlanta Highway in the old Waller Hardware building.

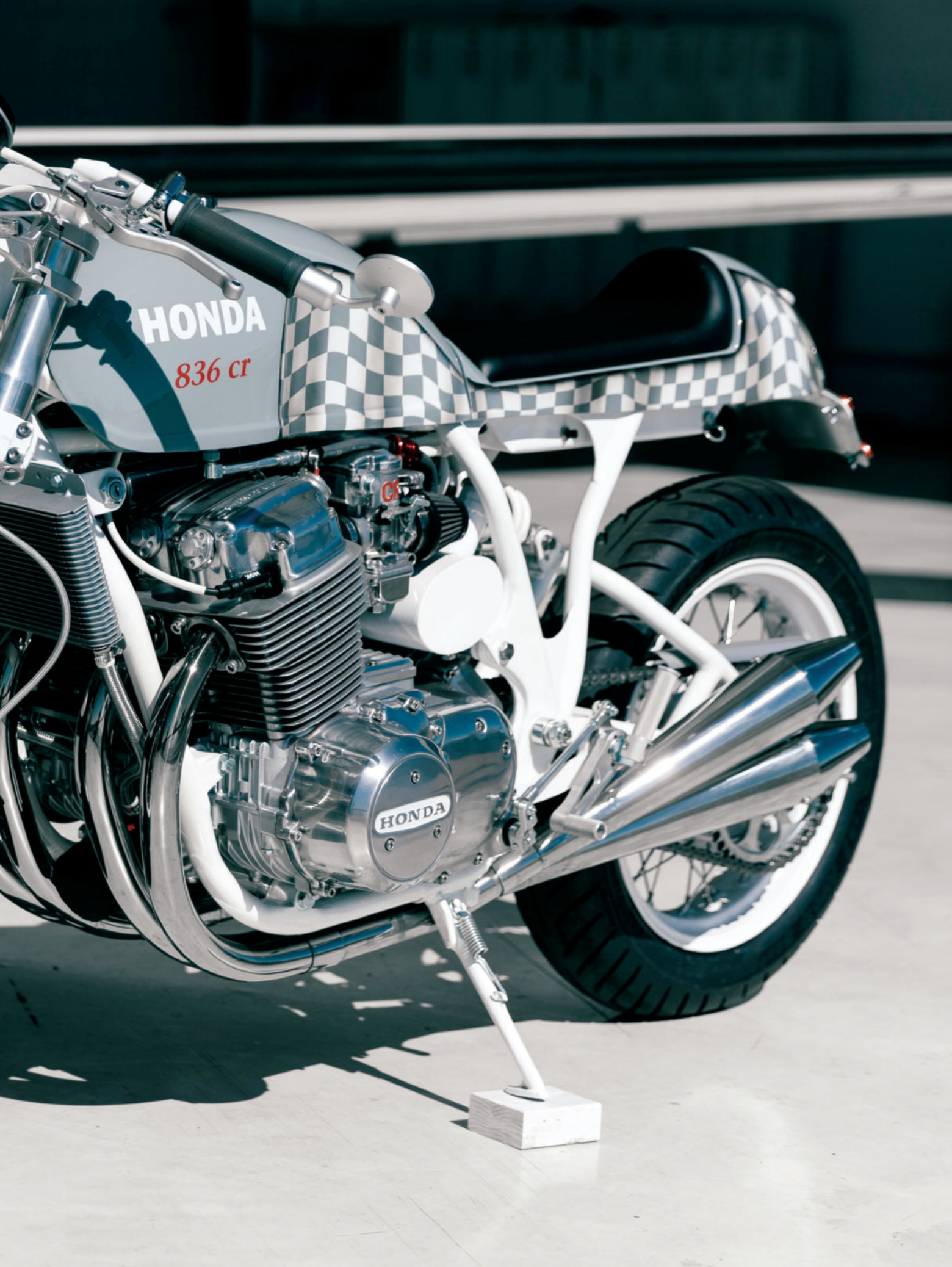
Custom calling

Howard's been a Honda fan ever since, and has restored many of the vintage Japanese machines. That's how he met another of the "nicest people," this time talented motorcycle restorer and builder Bill Bailey. Some 25 years ago, Howard discovered Bill working in the back of a custom motorcycle shop, and asked him to paint a C100 Super Cub equipped with the rare Honda Rally kit.

The two hit it off, and over the years Howard has sought Bill's help on several restorations. "I don't know anybody else like him," Howard says of his friend. "He does everything himself, with the exception of upholstery, and he does it all so very well."

So there was absolutely no question about enlisting Bill's expertise when Howard decided he wanted to build a one-off café racer. The idea for the project came to him a few years ago, immediately after Howard visited a vintage motorcycle enthusiast who had a Honda CB750 equipped with a bank of Keihin





HONDA

836 CR

HONDA

CR round slide carburetors. Howard was enamored with those performance carbs and says he almost immediately had a vision of a custom motorcycle built around a set of 31mm CRs mounted to a breathed-on but reliable Honda CB750 single-cam engine.

Everything got rolling when Howard bought a derelict 1973 CB750 for \$600. He delivered the basket case to Bill's Pelham, Alabama, home shop, where Bill immediately tore into the engine, only to discover a horror show of cracked cases, a scored crankshaft and several other nasty surprises. It didn't slow Bill down, however. He removed all of the engine internals and bolted the cylinders and head to the empty cases while searching eBay for better parts.

Meanwhile, Bill used the empty engine to mock up the custom café racer, which had a few main build parameters directed by Howard. For example, the bike had to incorporate a steel Benelli



HONDA 836 CR

Engine: 836cc air-cooled SOHC inline 4-cylinder, 65mm x 63mm bore and stroke, 10.25:1 compression ratio

Carburetion: Four Keihin CR 31mm

Transmission: 5-speed, chain final drive

Electrics: 12v, Dyna electronic ignition

Frame/wheelbase: Dual downtube steel cradle frame/57.5in (1,460.5mm)

Suspension: 2010 Honda CBR600 inverted fork front, custom monoshock swingarm rear

Brakes: Dual 12.2in (310mm) discs front, single 7in (179mm) drum rear

Tires: 120/70 x 17in front, 140/70 x 17in rear

Weight: 454lb (206.4kg)

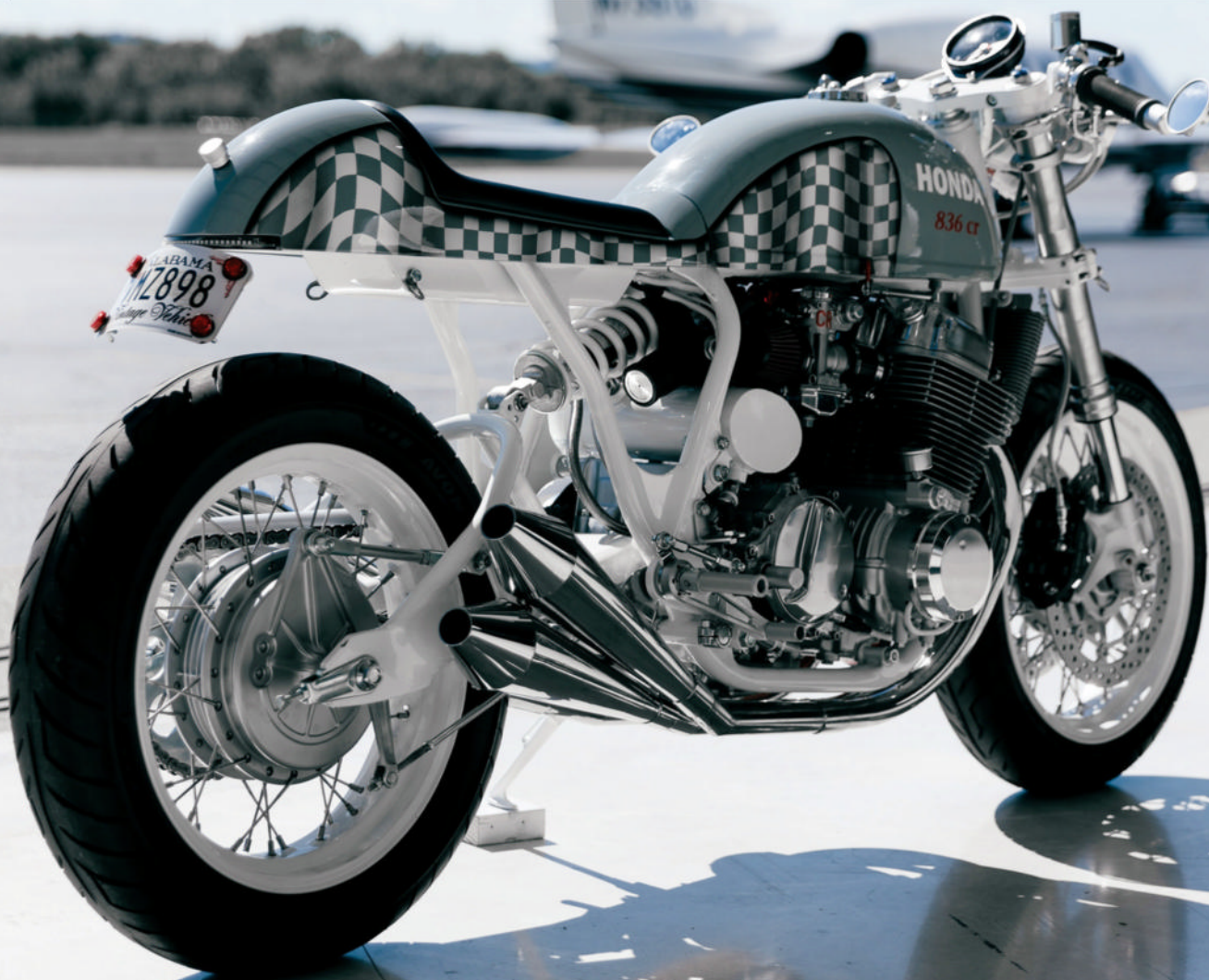
Seat height: 30.5in (775mm)

Fuel capacity: 2.6gal (10ltr)

360 Mojave gas tank, and it had to have a monoshock rear suspension and a modern front fork. There were a few other guidelines, but eventually Howard just sat back and let Bill do what he does best — get creative when building a custom bike.

While Bill also has an affinity for Honda machines, he says he's ridden and fixed them all. His first bike as a 10-year-old was a Honda 70, and when it started running poorly he told his dad they needed to take it to a shop for a tuneup. "My dad asked me if I had a manual for the bike, and when I said yes, he replied, 'Well, get in there and fix it,'" Bill says. "By the time I was in my early teens I was fixing everyone else's bikes."

Bill has also spent years drag racing motorcycles and has learned to perform many of the machining jobs that comes with constantly developing and tuning high-performance engines. He has spent 40 years working in motorcycle





shops, either repairing or building bikes, but now does his own thing in a well-equipped home-based location that includes his basement and two outbuildings, all filled with tools.

Getting to work

With the empty engine bolted in place, Bill cut away the frame's rear section. Using a bender, plasma cutter and TIG welder Bill shaped a new set of 1-inch-diameter tubes for the rear subframe, all gusseted with 1/4-inch plates. Instead of using the square-tube CB750 swingarm, he found a round one from a CB650. With the swingarm bolted into the stock CB750 pivot point, he bent and grafted a set of 1-inch tubes to the CB650 swingarm to meet up with a single shock from a 2012 Kawasaki ZX-10R. It not only works well, it also looks great. "It was really important that you be able to see through the machine and see the single shock under the seat," Bill says of his handiwork.

While working on the frame, Bill devised a clever way to remove the twin lower tubes from the upper backbone to facilitate working on the top end of the engine should the need arise. In a stock layout, the CB750 mill has to be removed to allow access to the valve train because the upper frame rails run so close to the top of the engine. On Howard's café frame, the frame rails feature special slotted lugs welded in place that, once unbolted, let you move the rails out of the way for easy access to the top of the engine.

The front forks came from a 2010 Honda CBR600. The bottom triple clamp is stock while the top came from Cognito Moto (cognitomoto.com), drilled and tapped by Bill to hold the all-in-one Cognito Moto GPS speedometer/tachometer unit equipped with a large speedometer and small tachometer. The stock Honda CBR600 clip-ons are equipped with mini-chrome push button switches from Dime City Cycles (dimecitycycles.com) set in Bill's specially made housings. Also from Cognito Moto is the kit that

includes brackets, folding rearset footpegs and brake and shift linkage from Tarozi. Rolling stock is a mix of custom and stock pieces. Up front is a stock CBR600 hub that Bill laced to an Akront flanged alloy rim with stainless steel spokes from Buchanan's Spoke & Rim (buchananspokes.com). It's a similar situation at the rear, with a CB750 hub laced into an Akront rim. Before spoking and truing the wheels himself, Bill used his homebuilt powder coating outfit and oven to treat the rims to a white finish while the hubs were done silver.

Bill reworked the tunnel of the Benelli Mojave tank to make it fit, and ordered a seat/tail section from Dime City Cycles. There was a large gap between the tank and seat, so Bill carved a foam plug and then molded fiberglass to the seat pan to make that transition flow and look as seamless as possible.

To build the oil tank Bill started with a piece of sheet metal and used his slip roller to produce a cylinder. In a perfect round shape, the tank wouldn't fit under the CR carburetors and air cleaners, so Bill put the cylinder in his shop press and squished it to give it an oval shape. It fits perfectly. All the fittings for the tank, and the oil cooler mounted up front, were sourced from automotive supplier Summit Racing Equipment (summitracing.com).

With the basic bones of the café racer finished, Bill turned his attention to machining and assembling the engine. Engine parts came from a number of different sellers on eBay. With the cases, cylinder and cylinder head in his shop, Bill cleaned them with his vapor blaster prior to inspection. After those bits were given the OK, Bill gave the replacement crankshaft and connecting rods a good once over before assembling them with fresh bearings.

Using his boring bar, Bill milled out the cylinders to take the engine from 736cc to 836cc, installing 65mm Wiseco pistons with 10.25:1 compression ratio in place of the stock 61mm 9:1 compression pistons. He also spent time porting and polishing the

"Much of the wiring was routed internally through frame tubes to a tray located under the seat pan."



The round slide 31mm carbs were the inspiration for the build (above right). The monoshock came from a Kawasaki ZX-10R (above).

cylinder head to work more effectively with the 31mm CR carbs he installed in place of the stock 28mm Keihin. He had a Norris "R" grind camshaft in his stock of spares, and installed it when putting the engine together. A complete 4-into-4 stainless steel exhaust system came from Benjie's Café Racers (bcrdesigns.com). Sparks come from a Dynatek Dyna S ignition system (dynaonline.com).

Much of the wiring was routed internally through frame tubes to a tray located under the seat pan that holds the battery and other electronics for a neat and tidy overall appearance. A keyed ignition under the left front side of the gas tank not only turns on the power, but also acts as a starter switch. Turning the key fully to the right energizes the electric starter, and when the engine fires the key is released and springs back to the "run" position — just like starting a car.

Neither Howard nor Bill wanted to paint the frame black — it was always going to be either white or red. Howard envisioned a Japanese flag painted on the tank, but that's where Bill deviated

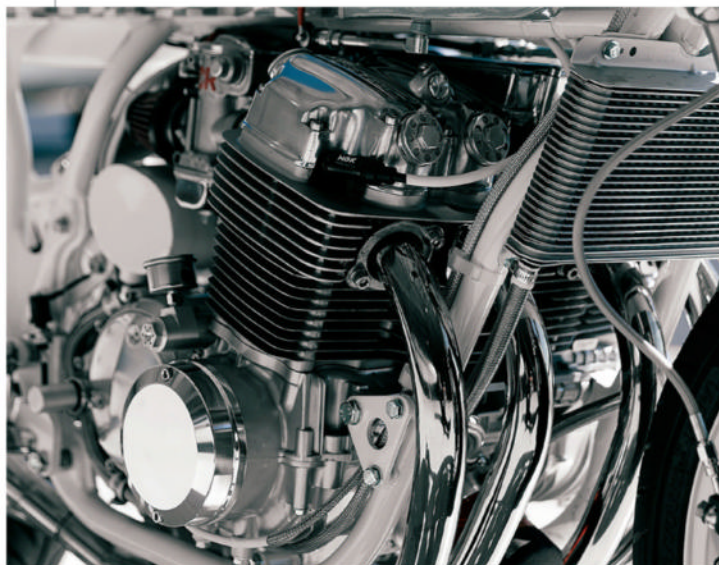


from the plan. He did paint the frame white, but sprayed the tank and seat pan gray, with a checker flag graphic for a final touch.

In the end the entire bike, from zinc plating the fasteners to installing the Avon tires on the powder-coated rims to the paint job, was completed in Bill's shop. Nothing was sent out for specialized service. Bill finished the build in five months. At 6 feet 5 inches tall, Bill says the bike is a tight fit for him, but he has ridden it to add some test miles. Roadracer friend Dave Crandall has added most of the miles, as Howard hasn't been able to ride it much at all. After four hip replacements — the latest occurring during the build — Howard can no longer ride very far or for very long,

which has led to the decision to sell the 836 CR.

But that doesn't disappoint Howard much, because the build was so engaging that he and Bill have decided to entertain custom builds for other riders. They don't have a website yet, but if you're interested in talking to Howard, just send him an email (hboone6153@bellsouth.net). For Howard, however, it all comes down to Bill's talents. "He's one of the nicest people, and quite simply a master craftsman. I think this café racer he built is proof of that," Howard says. **MC**



The complete exhaust, headers to mufflers, was built by Benjie's Café Racers. The oval oil tank sits behind the carbs (above).

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LAST OF ITS SPECIES



A rider wearing a black helmet and a brown leather glove is leaning forward on the handlebars of a silver and black AJS 500cc E90 Porcupine motorcycle. The motorcycle is in motion, as indicated by the blurred background and the spokes of the front wheel. The front wheel has a distinctive multi-spoke design. The background shows a wooden fence and green foliage.

AJS 500cc E90 Porcupine

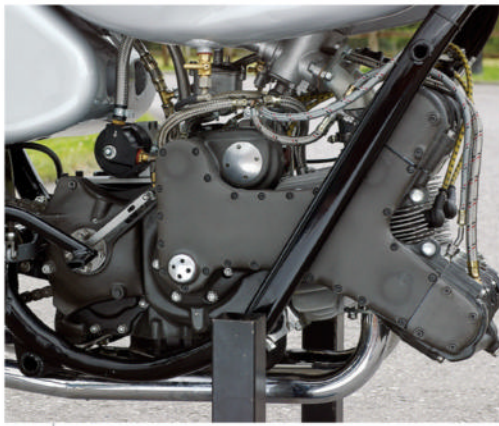
Story by Alan Cathcart
Photos by Kyoichi Nakamura

Sammy Miller's passion for motorcycles, which led him to achieve success on two wheels in both trials and road racing before assembling one of the world's finest bike collections, started in Northern Ireland in the post-World War II era.

"My first impressions of anything to do with bike racing were in 1947," recalls Sammy, now an energetic and enthusiastic 83 years young. "That's when some of my pals and I rode our bicycles up to the Clady circuit for the first night of practice for the Ulster GP, on the Thursday evening. There we were in the hedge, on the Seven Mile Straight running down to Clady Corner — and the first three bikes that roared past us were the three AJS Porcupines, ridden by Jock West, Ted Frend and Les Graham, all on full rattle. It was unbelievably thrilling — and that was me sold on bikes for life, from that moment on!"

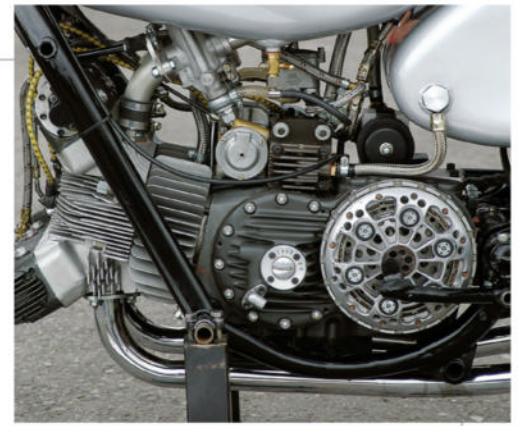
In the late 1970s, three decades and a thousand Trials victories later, the chance came to acquire not only one of those very same Porcupines that had so impressed him as a kid, but also the sole surviving example of its predecessor, the prewar supercharged V4 500cc AJS, from former AMC sales director and ex-works racer, the late Jock West. The fact they were both static displays without any engine internals was merely an additional challenge for someone like Sammy, who believes more than most that what man has made once, man can make again.

The restored V4 had already proved a star attraction at major European historic events, before being joined on the racetrack in



1947 AJS 500 E90 PORCUPINE

Engine: 498cc air-cooled DOHC parallel twin, 54mm by 54.5mm bore and stroke, 9:1 compression ratio, 48hp @ 7,600rpm
Top speed: 135mph (1949 Isle of Man TT)
Carburetion: Two 1-1/8in (28.5mm) Amal GP
Transmission: 4-speed, chain final drive
Electrics: Lucas magneto ignition
Frame/wheelbase: Dual downtube steel cradle/56.5in (1,435mm)
Suspension: AMC Teledraulic telescopic forks front, swingarm with dual AMC Jampot shocks rear
Brakes: 8.25in (210mm) TLS drum front, 8.25in (210mm) SLS drum rear
Tires: 3 x 21in front, 3.25 x 19in rear
Weight (dry): 335lb (152kg)
Fuel capacity: 6.5gal (24.6ltr)



May 2004 by the newly rebuilt "Porc." Together, the two ex-works AJS multis have successfully publicized the magnificent Sammy Miller Museum at New Milton, Hampshire, U.K. (sammymler.co.uk), arguably Europe's finest and most extensive collection of fully restored historic motorcycles.

Riding the E90 Porcupine on the test track he's created on the grounds of Bashley Manor, where the museum is located, was a unique chance to sample the first-ever 500cc World Champion Grand Prix racer in action.

The Miller "Porc" is the only example of the first-series E90 known to have survived of the total of eight AJS parallel-twin Grand Prix racers built over the bike's eight-year racing career. The ones in the U.S. belonging to Team Obsolete and the Barber Motorsports Museum are both the later E95 versions with cylinders inclined 45 degrees from horizontal, rather than the 15 degrees of the Miller E90.

That makes it the sole surviving genuine Porcupine, complete with the spiked cylinder head cooling fins that gave the model its nickname.

E90 tech

A total of eight AJS 500cc parallel-twin Grand Prix racers were built during the project's lifespan from 1947 to 1954 — four each of the two different types, the E90S with its cylinders raised just 15 degrees from horizontal, and the E95 introduced in 1952 with them inclined at 45 degrees. According to factory rider Rod Coleman, 12 engines in all were manufactured, four each in 1947 (the original spiky-finned design dubbed the Porcupine), 1951 and 1953. While externally these differed architecturally, inside they all shared a common format, as well

as major components such as crankshaft assemblies, engine dimensions and cylinder head design.

The 54mm x 54.5mm "square" bore and stroke engine dimensions were unusual as well as farsighted in those days of long-stroke engine formats, as was its unit-construction design with gear primary drive, at a time when other British race bikes still employed separate gearboxes and open primary chains. From 1951 on, the AJS was shorn of its spikes, replaced by a more conventional fin layout to create an undeniably Latin-looking power unit — in spite of which, it still kept its Porcupine

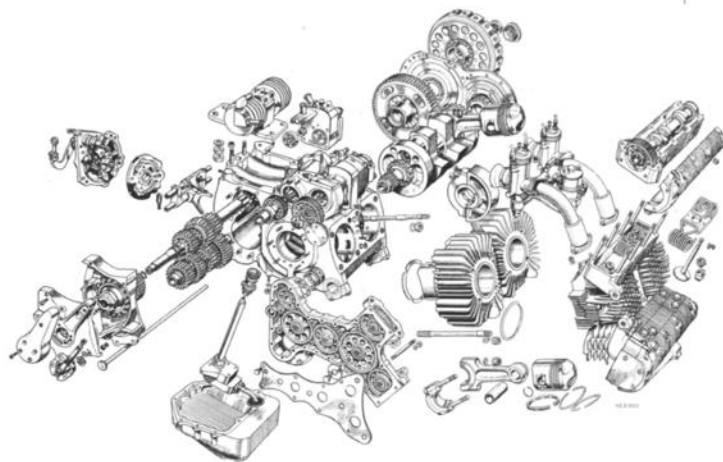




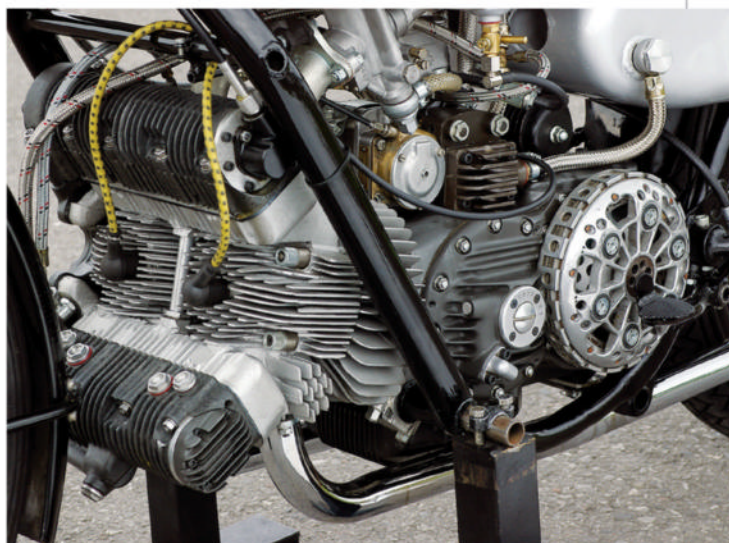
nickname. The original air-cooled parallel-twin engine's robust layout befitted an engine originally intended to be supercharged, with attendant stresses, and features finned dry-sump crankcases cast in magnesium, with a separate oil tank beneath the seat. The 500cc World Champion AJS E90 twin was more porcine than Porcupine when it came to starting it from cold, though, and often had to be towed into action at the end of a rope, after first being filled with oil heated on a primus stove, while space heaters blew hot air at the engine to warm the crankcases. All this was to reduce the overwhelming oil drag on the plain-bearing engine and roller-bearing transmission when trying to fire it up!

The heavily finned and deeply spigoted separate aluminum cylinders are capped by a one-piece alloy double overhead cam cylinder head. Its two forged roller-bearing camshafts are hollow and are driven by a train of eight gears running on roller bearings up the right side of the engine in a Y-shaped case, with an outrigger plate supporting the ends of the spindles. A ninth, half-time spur gear drives the high-pressure oil pump, with main feeds to the center main bearing and cam boxes to lubricate the connecting rod big ends and each cam face. The same pinion also drives, via a short chain, the Lucas magneto mounted atop the engine cases.

Inside, the pressed-up three-bearing 360-degree crankshaft (both pistons rise and fall together) is mounted on a double-flanged plain center main bearing, with caged-roller outer bearings, and runs backwards, a legacy of the original supercharger-inspired design in which the crank meshes directly with the gearbox mainshaft, which also would have driven the supercharger. Originally, the crankshaft was a forged one-piece unit, with effectively no flywheels, a further spin-off from the original blown engine, where compressor loading would have replaced the inertia effect of these. The resultant abrupt extremes of engine acceleration and deceleration produced massive loadings in both directions on the Lucas magneto's two-piece drive shaft, with consequent fractures that plagued the AJS throughout its early career until the shaft was replaced by a chain, which absorbed the shocks better.



The 1949 AJS E90 Porcupine engine (above). The spiky fins on the head can be seen around the spark plug caps (below).



Les Graham descending Bray Hill
during the 1949 Isle of Man Senior TT
aboard an AJS E90 Porcupine.

Hepolite forged full-skirt pistons are mounted on forged, bolted-up RR56 aluminum connecting rods, whose split big-ends run on white-metal plain Vandervell bearings. There are two valves per cylinder of what seems a very small diameter, even for the period — 7/8-inch inlets and 5/8-inch sodium-cooled exhausts, each with quite thick stems and set at a 90-degree included angle, controlled by fully enclosed overlapping hairpin springs. Twin straight-cut spur gears comprise the primary drive, with final drive from the 4-speed all roller-bearing Burman gearbox exiting on the opposite side, on the right of the bike. The large-diameter dry clutch runs at a fast 0.7 times engine speed, a hangover from the substantial torque expected from a blower engine. The twin 1-1/8-inch Amal GP carbs are rubber-mounted to the inlet stubs, which deliver an extra four degrees of downdraft. Fuel flows from the massive 6-1/2-gallon fuel tank to a remote float positioned beneath and behind the gearbox.

The E90 tubular-steel frame sees the engine carried quite low down, in a double-cradle design welded up from both round and oval-section tubing, with space for the twin megaphone exhausts to run beneath the lower frame tubes. The same AMC Teledraulic forks are fitted as used from first to last by the Porcupine family, whose humble origins date back to the wartime G3/L Matchless 350cc WD bike used by legions

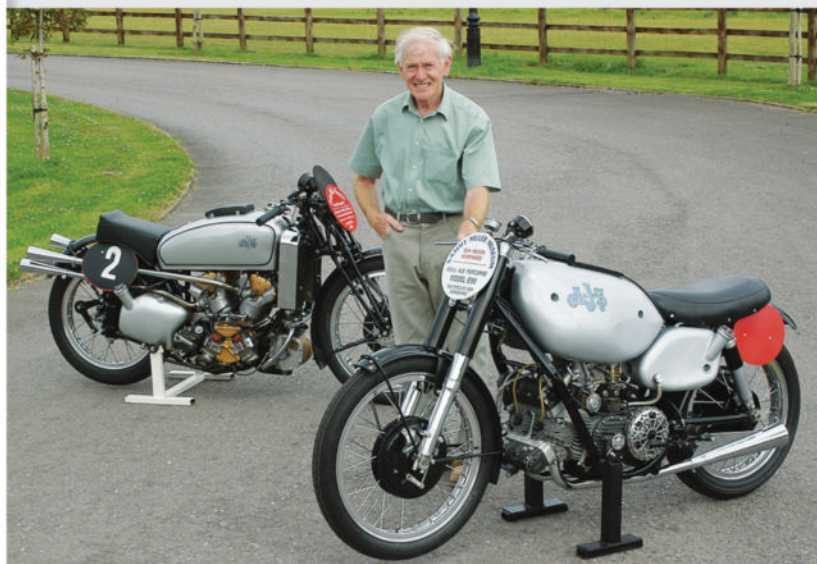


of British military dispatch riders, matched at the rear by the firm's trademark oil/air "Jampot" shocks. Their damping was constantly criticized as inadequate, especially compared to the Manx Norton's Girlings: there was a mere 3 inches of suspension movement both front and rear. The front 19-inch wheel carries the same 8.25-inch twin-leading-shoe drum brake as the lighter, slower 350cc 7R single, with cast magnesium hubs, same as the same-diameter single-leading-shoe rear. The

wheelbase is shorter than it looks (thanks to the low-slung fuel tank) at 56.5 inches, while the dry weight of 335 pounds was no lighter than the half-faired version of the Gilera 500/4, with its bigger brakes and twice as many cylinders.

The Sammy Miller Museum

The Sammy Miller Museum (sammymler.co.uk) in New Milton, Hampshire, U.K., is crammed full of interesting machines — including factory prototypes and numerous ingenious designs from all over the world. It also counts as one of the world's largest collections of exotic racing bikes, all of them in running order and including the legendary Moto Guzzi 500 V8, the supercharged AJS 500 V4 and post-war Porcupine, and innumerable famous bikes from Triumph, Norton, AJS, Velocette and many more. There are also offroad enduro, motocross and trials icons. The museum is open to visitors daily from 10 a.m. year-round.



Getting down to business

The E90 is very different to sit on and ride compared to its E95 successor, which I have actually ridden in anger at the Goodwood Revival race meeting. Whereas the low-slung fuel tank of the later E95 makes you feel perched atop it, the E90 feels much more normal, if undeniably hefty. The 6.5-gallon tank on the E90 is shaped to allow you to grip it with your knees. The very flat but notably raised one-piece handlebar bolted to the upper yoke of the AMC Teledraulic forks ensures a wind-cheating, forward-leaning stance at all times, resulting in a commanding riding stance. The footrests are quite rearset and fairly raised by the standards of the era, probably to stop boot leather being worn away by the Swiss-cheese clutch basket whizzing around by your left toe, just behind the plaque announcing that this is engine No. E-3.

Firing up the Porc from cold is improbably easy: Sammy floods the small remote float nestled between the twin Amal carbs, pulls the bike back on compression, takes a couple of steps, leaps on and drops the clutch — and the 360-degree parallel-twin AJS roars to life, the twin megaphones uttering a war cry resembling a Triumph Bonneville on steroids — muscular and



mighty, with just a hint of a twang to the engine note.

Once fired up, the AJS engine is pretty smooth for a parallel-twin with a 360-degree crank. Credit the engineering skills of Ian and John Bennett, proprietors of Bennett Engineering, whom Sammy commissioned to manufacture a new three-bearing, one-piece crankshaft to replace the one missing from the empty engine, allowing Sammy to rebuild the double overhead cam AJS to track-worthy condition.

Now in the seat of the Porc, I'm enjoying a series of squirts round the Miller test track. Compared to the later 1954 E95, this older bike is much less cammy, pulling cleanly away from much lower down than the newer bike's 5,000rpm power threshold. With its smaller, gently tapering open megaphone exhausts, the E90 drives well from around 3,000rpm on the reverse-sweep Smiths Chronometric rev-counter parked on the left of the big, knurled AJS-embossed steering damper knob, which has an oil pressure gauge positioned just behind it to the right. I don't really have time to look at this on such a busy little circuit, but there is a wide spread of power up to 7,000rpm, making this an easier bike to ride round tighter tracks. But the engine feels very free-revving and eager, as well as well balanced — a real credit to the combined talents of Bennett Engineering and the Miller Museum workshop crew, especially Sammy's right hand man, Bob Stanley, who fettles it like a baby.

Handling is even slower than on the later E95, thanks mainly to the 21-inch front wheel and even more kicked-out forks, but paradoxically the steering feels more responsive than the 1954 bike, especially when I rode it at tight and twisty Mallory Park, thanks to a combination of the more upright riding position and the extra leverage of the flat, one-piece bar. The conical 8-1/4-inch brakes are unexpectedly effective — though only once I'd

warmed up the linings by riding along with the lever applied for a short distance, just to make sure I could stop in time to prevent running into the gate at the end of the Bashley Manor drive! And although the 4-speed Burman gearbox has the same slow change and wide-spread upper ratios as on the later bike, the change action is smoother on this one, especially coming down through the gears to use a little (OK, a lot!) of engine braking to anchor up from higher speeds in front of a watching Mr. Miller. If he blanched a little at one escapade when I had the rear Avon drifting slightly round the left hander into the museum courtyard, he didn't show it — he must have realized I needed more laps to warm it up better ...

But all too soon, playtime has ended, and the sole surviving "real" Porcupine is tucked up back in the Miller Museum for another little slumber — until Sammy runs it again at selected events around Europe, like the Valencia GP in Spain. For me it has been an educational experience as well as an honor to complete my master class in hands-on Porcupine riding. Within the context of its era, I can now appreciate how this earlier bike was a fitting World Champion in 1949, winning three out of the five GPs held that year. It was almost as nimble as and certainly faster than the Norton singles, while definitely better steering than if not quite as fast as the Gilera fours.

For one year the AJS twin was the best of both worlds, its assets outweighing its disadvantages. But in successive seasons, as AMC failed to keep pace with development and narrowed the power band to keep up with the competition, the AJS became a flawed compromise, falling instead between two stools — the traditional twin-cylinder handicap of being neither one thing nor the other, which would prevent such a bike from ever again winning the coveted 500cc World Championship. **MC**



A multinational collection of classic bikes lined up in Luckenbach.

CLASSIC SCENE

2017 Harvest Classic European and Vintage Motorcycle Rally

Story and photos by Corey Levenson

For those who are passionate about vintage and classic motorcycles, this annual event has become the crown jewel of Texas rallies. The Harvest Classic takes place over two days every October in Luckenbach, deep in the heart of Texas. The town consists of a couple of old wooden buildings, has an official population of 3 and sits in the middle of the Hill Country, not far from Austin and San Antonio. Surrounded by some of the best roads in Texas, it's a perfect setting for a motorcycle rally.

Friday's main attraction was a Fun Run restricted to bikes of 100cc or less, and there were 150 of the little buggers. Event organizer Russell Duke described it as "15,000cc of pure fun!" Later in the day there was live music, and with about 800 people choosing to camp at the event, it made for a fun evening campfire scene.

Saturday was the big day, with a bike show featuring 200 vintage and classic motorcycles, a swap meet, multiple vendor booths, more live music, a raffle and live auction, the Globe of Death daredevil show, trials riding throughout the day and a BBQ dinner. The evening attraction was the U.S. premiere of the 1956 Italian film *I Fidanzati Della Morte* (*Engaged to Death*), a tangled love story set against the colorful background of period motorcycle

racing. The recently restored flick features thinly disguised Moto Guzzi and Gilera GP bikes clad in dustbin fairings. Great stuff!

The 2017 rally drew about 2,500 attendees, but the organizers aren't interested in growing the event — they just want to make it better every year. Russell says the goal is for the Harvest Classic "to be a rally that embraces the unique and fun aspects of motorcycling during a weekend where vintage and European motorcycle fans can get together to raise money and show support for children and families that are battling childhood cancer." Proceeds from the rally benefit the Candlelighters Childhood Cancer Foundation. Since the first rally in 2003, contributions have totaled \$690,000, including \$90,000 this year.

The first Harvest Classic rally arose from love and loss — Russell's love of motorcycling and the loss of his young daughter to cancer. The volunteers who organize the event are passionate and it shows in the vibe that surrounds the rally. Russell says it well: "The energy of the event is something that people feel when they come to the rally. Maybe we feel the spirit of my daughter, Emma, soaring above us all; I don't know. It's hard to describe, but it feels like it's right, like it's the best thing we do." The sign on the entrance to the rally says it all: "Abandon all despair, ye who enter here." Go to harvestclassic.org for info on the 2018 rally. **MC**

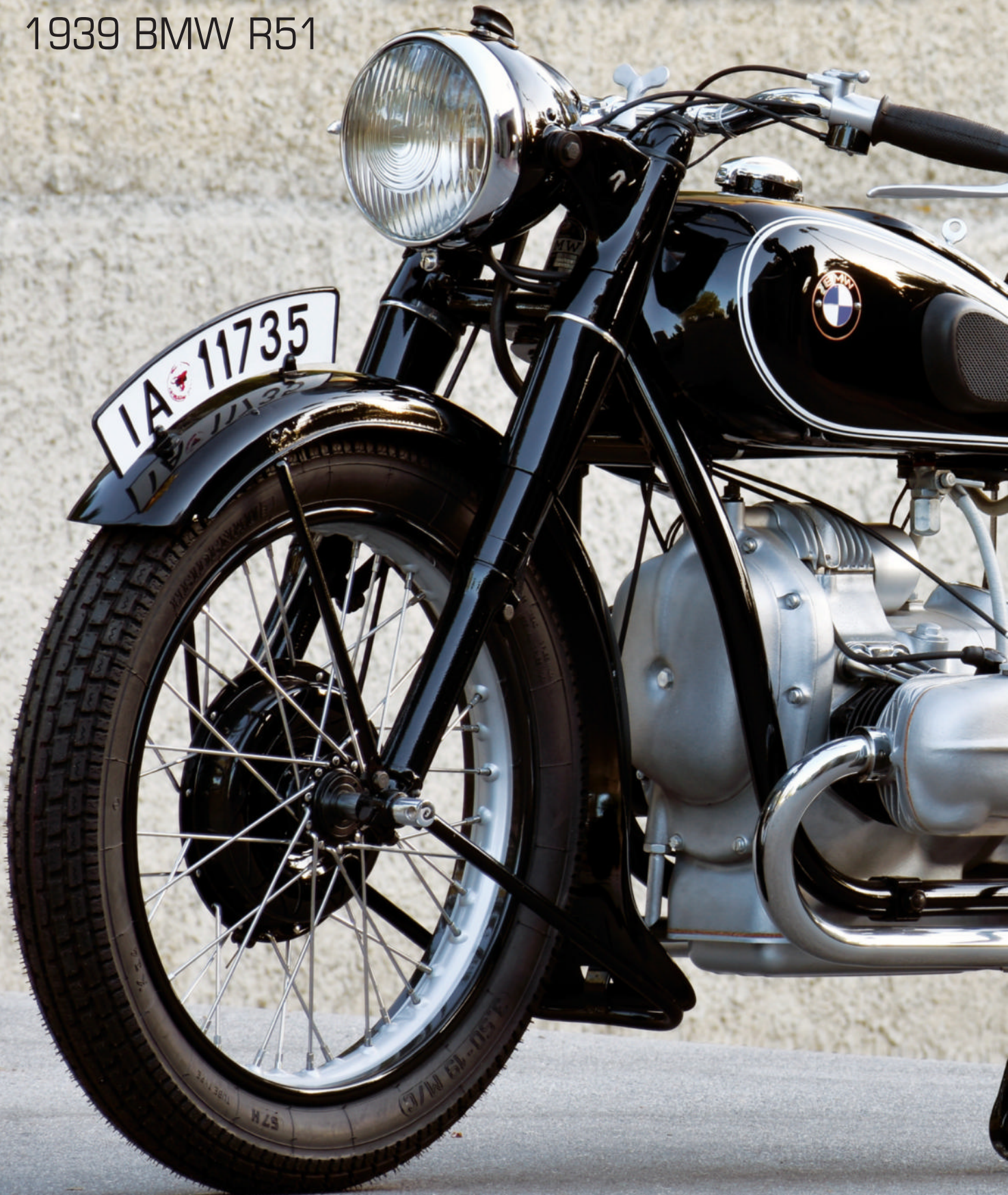


Clockwise from top left: Shovelhead and Beemer bob jobs with the Globe of Death; Best-In-Class Nimbus Four; a lovely unmolested BMW barn find; scrutinizing scooters; Honda NC30 and RC30; tent life in Luckenbach; a trials competitor getting up and over; 1964 Pannonia 250 with Duna sidecar.



TIME TRAVELER

1939 BMW R51



Story and photos by Dain Gingerelli

Imagine if you will that it's April 12, 1939. You're in Berlin, Germany, standing outside a building known as the SS Hauptamt, the headquarters of the Third Reich's *Schutzstaffel*, an organization more familiarly known as the treacherous SS.

Nearby, a delivery truck rolls to a stop in front of the building. Strapped to the truck's flatbed is the very 1939 BMW R51 featured here. Officially, the bike bears frame number 509728 and engine number 504413, signifying that it was manufactured only a few weeks before, on March 24, 1939, to be exact. As the sleek bike is ceremoniously rolled off the truck and onto the cold, hard

pavement, an SS officer signs a document confirming the bike's delivery. The BMW is now part of the Schutzstaffel's motor pool, and will eventually have a role of sorts, perhaps transporting SS couriers or even ranking SS officers from one station to the next as the Third Reich's vast military juggernaut begins its deadly sweep across Europe.

R51 roots

We don't know who within the SS rode this particular BMW, but one thing we know for sure about the R51 model is that it was based on the highly touted R5 (*Motorcycle Classics*, July/August 2016) designed by Leonard Ischinger and first offered in 1936. BMW aficionados call the R5 Germany's first superbike, and author Ian Falloon, in *The Complete Book of BMW Motorcycles*, spells out just how important the new model was: "The R5 was arguably the most advanced motorcycle available at that



Restored from a pile of rusted parts, this 1939 BMW R51 now lives in California.



time, not only looking much more modern than the R17 with its pressed-steel frame, but it was significantly lighter and cost only 1,550 marks. Overnight, BMW had made its R17 sporting flagship obsolete."

The R5's engine, a design that carried over to the R51 platform, was BMW's first opposed-twin that didn't use split engine cases; the R254-model 494cc overhead-valve engine utilized a single-piece tunnel-type case, with the crankshaft installed and removed from the front. Timing chains drove the two camshafts positioned slightly above and to each side of the crank, allowing the valve gear in each cylinder head to use shorter tappets and pushrods than previous BMW opposed twins. The valve gear was actuated by rockers moving on needle roller bearings and tensioned with hairpin springs.

Mounted on top of the unit engine case sat the Bosch generator; the distributor and coil were tucked with Teutonic efficiency neatly under the front engine cover. The R5's 22mm Amal carburetors were positioned on either side of the engine, each feeding its own cylinder head. The 4-speed transmission had its foot-shift linkage on the left side; on the right was a hand-lever used primarily for quickly

shifting the transmission into neutral for stops. The positive-stop foot gearshift design was based on a system developed by Englishman Harold Willis in 1928 for Velocette. This basic engine and transmission package remained a part of the R51 design that bowed in 1938.

The R5 also sported an all-new tubular steel frame, although there still was no rear suspension. That would come later with the R51. Up front, BMW engineers employed a telescopic fork, a rarity for the time, and the sum total of these components lent to the R5 qualifying as an *uberbike* of the 1930s. Indeed, much of the R5's overall design was influenced by BMW's Grand Prix road racing model, the 500 Kompressor, a racer powered by a supercharged 500cc opposed-twin engine and campaigned with great success by famed BMW factory rider Georg Meier. In fact, Meier eventually won the famous Isle of Man TT's Senior class in 1939 riding the 500 Kompressor.

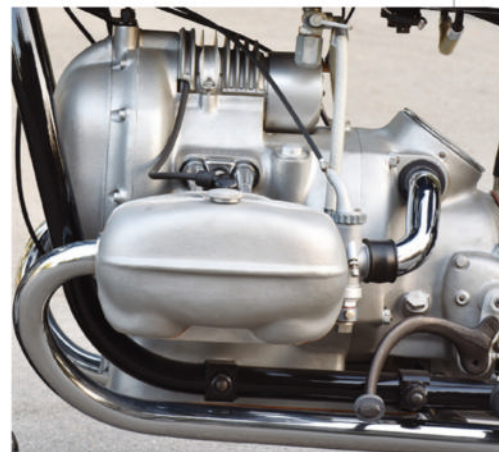
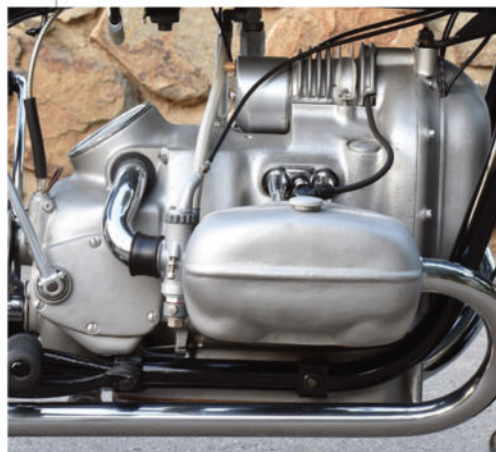
Bringing up the rear

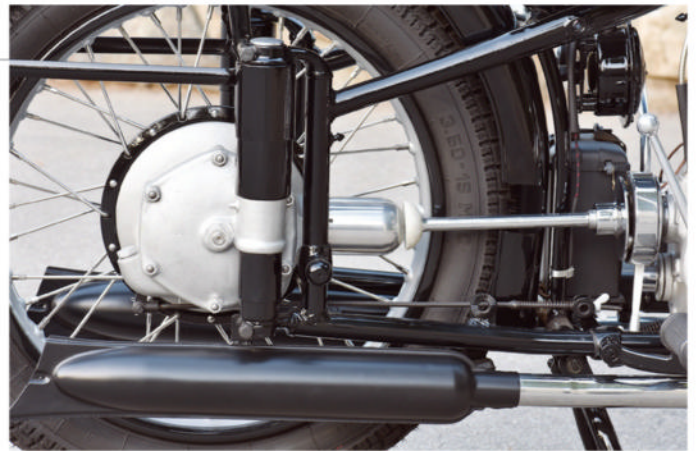
Falloon touted the R5 as a true landmark design. Wrote Falloon in his BMW book: "The R5 was a milestone motorcycle for BMW, finally challenging the British in performance and handling. One of the



1939 BMW R51

Engine: 494cc air-cooled OHV opposed-twin, 68mm x 68mm bore and stroke, 6.7:1 compression ratio, 24hp @ 5,500rpm
Carburetion: Two 22mm Amal
Transmission: 4-speed, shaft final drive
Electrics: 6v, magneto w/coil and breaker points ignition
Frame/wheelbase: Dual downtube steel cradle frame/55in (1,397mm)
Suspension: Telescopic forks front, plunger coil springs rear
Brakes: 7.9in (200mm) SLS drum front and rear
Tires: 3.5 x 19in front and rear
Weight (dry): 401lb (182kg)
Fuel capacity: 3.7gal (14ltr)
Price then/now: \$620 (1,550 marks)/\$15,000-\$30,000





standout machines of the decade the R5 also provided the basis for BMW twins for the next 20 years."

Those "next 20 years" began with the R51 that replaced the R5, as did the R61 replacing the R6, which was powered by a sidevalve engine. Those two models were joined in 1938 by the R66 and R71. The common denominator for all four models was the addition of the plunger telescopic rear suspension at the rear axle, which necessitated the addition of universal joints for the driveshaft to compensate for the up and down rear wheel travel. This design was a carryover from the 500 Kompressor racer's rear suspension, originally developed by Alex von Falkenhausen.

Another tidbit of history before we continue: Most of the new 1938 and later models rolled out of the factory sporting black-finished mufflers. It seems the *Führer* and his gang needed the precious chromium for the rifle barrel bores that the Third Reich had ordered for its military, and so the good guys — that would be any BMW civilian customer — had to do without the shiny stuff on their motorcycle's mufflers.

Despite such inconveniences and limitations, sales of BMW models continued to grow as the 1930s decade rolled to its ill-fated conclusion. According to sources, overall BMW produc-

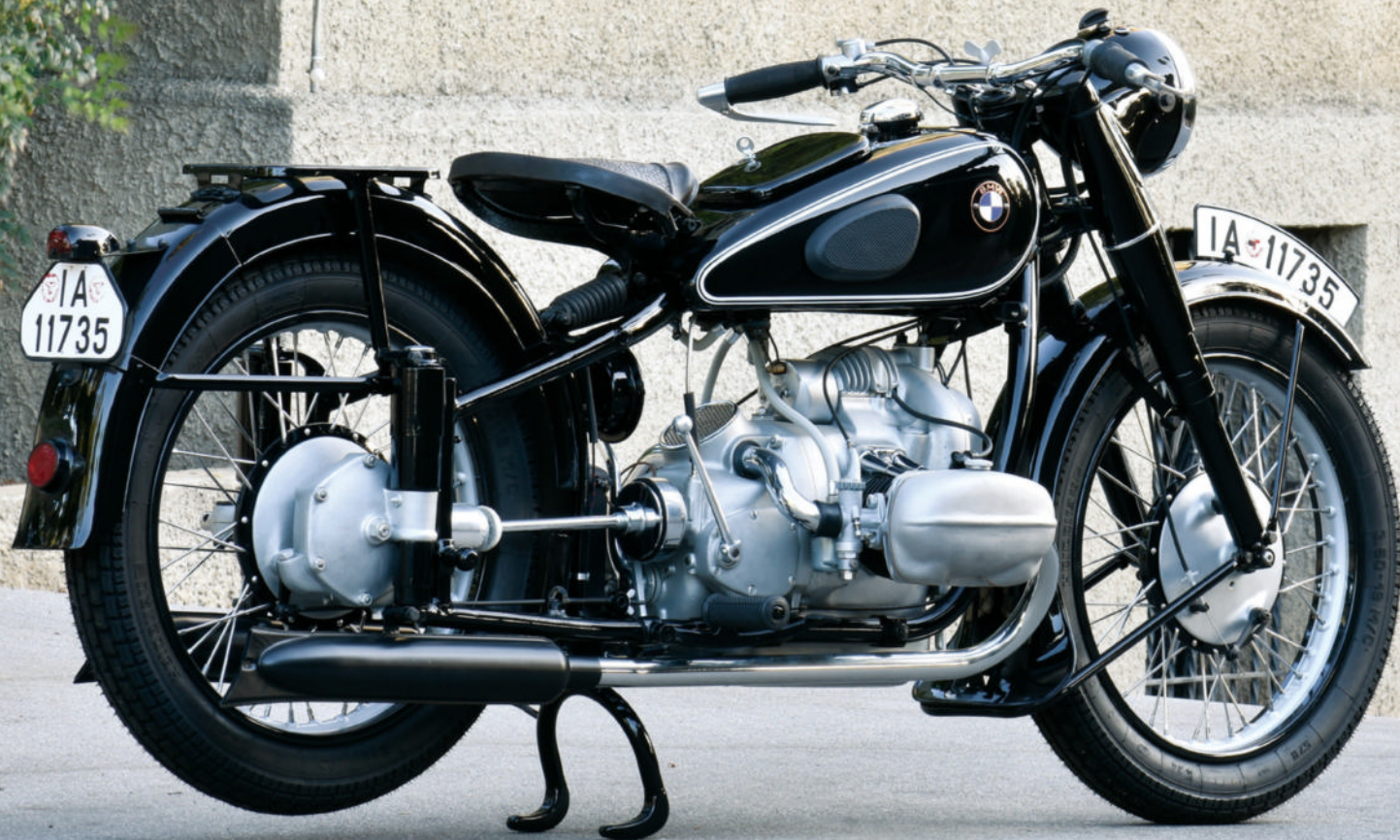


The transmission can be shifted by hand (left) or by foot (above). The exposed driveshaft to the rear wheel (top) looks small compared to more modern enclosed shafts, but is an elegant detail.

tion climbed from 10,005 units in 1935 to 11,922 the following year, creeping up to 12,549 bikes in 1937. Overall sales spiked noticeably the following two years, reaching 17,300 in 1938 and 21,667 during the last peaceful year the world would enjoy until late 1945.

During those final few years before war broke out, BMW, probably spurred by the Third Reich itself, realized the importance of racing in terms of engineering progress and public relations, and in 1937 offered the R5SS, a production racer for privateer





riders. The R5SS was stripped of street gear such as lights, horn and mufflers, and its engine boasted four more horsepower to the rear wheel.

As you might guess, the R5SS was followed by an R51SS production-based racer. The newer model touted more than just new rear suspension, too. The engine utilized a pair of angry 6/432 Amal/Fischer 24mm carburetors that fed an engine with a slightly higher compression ratio of 8:1. The 4-speed transmission also had higher gear ratios to help attain a higher top speed on the racetrack, and the sum total funneled 28 horsepower to the rear wheel, a combination that all but pushed the competition out of the way on the racetrack. Interestingly, though, the R51SS was delivered with lights.

In stock trim, the R51 weighed 401 pounds, and its engine brought 24 horsepower to the party. Although it shared the same sleek silhouette as the R5, the noticeable difference was the addition of rear suspension. Interestingly, some BMW-ites today categorically claim that the R5, with its rudimentary rigid-frame design, handles better than the fully sprung R51. While the plunger rear suspension's 2 inches of up-and-down travel might help smooth the ride over some roads, logic dictates that the springs' stationary vertical plane of movement, rather than the sweeping arc that's found with bikes using rear swingarms, might actually work against itself when negotiating some bumps in the road.

By 1940 BMW was forced to cease R51 production, and we all know how things turned out during the subsequent five years for Nazi Germany and the rest of Europe. After the war, BMW production was initially limited to the single-cylinder R24, but by 1950 BMW engineers had located a few surviving R51s that they used to reverse engineer for production of an updated model, the R51/2. The new model's engine had coil valve springs that replaced the more archaic hairpin valve springs originally

used in the 1938-1940 models, and engine oil circulation was improved. Revised hand controls on 7/8-inch-diameter handlebars (replacing the fatter 1-inch bars) also found their way onto the postwar model.

The following year, 1951, saw the introduction of the R51/3. Foremost, its unit-case engine sported single-cam cylinder heads using spur gears that eliminated the trouble-prone cam chain found on the R5 and R51, and an improved oil pump was located beneath the crankshaft. Despite these improvements, the R51 series became a footnote in BMW's glorious past, as newer models including the R50, R60 and R69 sporting more up-to-date technology found their way into the lineup.

"For some reason this BMW survived the war and ended up in the U.S. after the war."

War refugee

So what about this particular R51 that was supposedly dispatched to the SS? Good question, and while we don't have an answer regarding the bike's war-torn years, one thing's for certain: At some point in time the bike made its way across the Atlantic Ocean and onto these shores. Today, it's owned — and was restored — by Mike Dunn,

proprietor of Vintage German Motorcycles (vintagegermanmotorcycles.com) in Riverside, California.

"For some reason," Dunn says, "this BMW survived the war and ended up in the U.S. after the war." Dunn, who acquired the bike from a collector on the East Coast, also chased down documents confirming the bike's SS connection.

By the time the R51 found its way to Dunn's shop in California the bike was, in his words, "a pile of rusted parts." As evidenced by the photos, the R51's restoration is over the top. Authentic BMW hardware, including Ribe, Verbus and NSF fasteners are used throughout. "All of the engine nuts and bolts are cadmium plated," Dunn says, adding, "the frame bolts are all black oxide per the manual, and nothing was overlooked

during the documented restoration process."

Look closer and you'll notice the electrical wires are wrapped in cloth, just as they originally were in 1939 — "no plastic modern stuff," as Dunn puts it, and the fuel lines are silver cloth, also like the originals. Ditto for the cloth-wrapped control cables, and all of those classy cast aluminum trim parts that make vintage BMWs look so cool are neatly finished, too, not overly polished as some restorations mistakenly offer.

The paint is authentic, as well: There is no powder coating to be found. Another nice touch is concealed within the headlight nacelle that houses the bike's only gauge. "The original speedometer was restored without removing the original finish on the face plate," Dunn says.

To make sure he got things right with the restoration, Dunn said that he pored over hundreds of period photos to determine the correct parts and their necessary finishes and trim. Finally,



The cylinder heads of the R51 hang out in the breeze for optimal cooling.

the bike's yearlong restoration culminated shortly before the 2016 Quail Motorcycle Gathering in Carmel, California, where the R51 was runner-up in Best of Show judging. Fittingly, it was another BMW, the immaculate R37 racer owned by collector Robb Talbott, that scored first place.

First-, second-, even third-place, when all is said and done accolades and trophies really don't matter when your eyes feast on historical bikes such as this R51. Gaze at the bike for only a few seconds and it's clear that when BMW's designers laid down the lines for this motorcycle so many years ago, they also penned their own place in history.

Simply, the R51's classic, genteel, R5-derived silhouette is breathtaking. Indeed, the R51's long, low profile is as elegant now as when it first appeared in 1938. And the historical perspective aside, Mike Dunn's example remains a jewel that further links chosen bikes of all ages to a single thread, which is that of timeless beauty. **MC**

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THE CLASSIC TT: A BLAST FROM THE PAST

Today's fastest riders on
yesterday's fastest motorcycles

Story and photos by Corey Levenson

It's about 4,800 miles from my home in Texas to the Isle of Man. Yes, it takes planning and finances to get there, but once you step ashore, smell the sea air and take a look around, you'll realize you've entered moto heaven. When it's race week on the island, you'll see classic motorcycles and those who love them in all directions.

Birth of the Classic TT

Organized motorcycle racing on the Isle of Man started in 1907. The Tourist Trophy (TT) races are traditionally held in June and feature the world's best professional road racers on top-dollar factory-sponsored machines. Since 1923, there has also been a somewhat lower profile event known as the Manx Grand Prix (MGP). It takes place in late August and features up-and-coming amateur riders hoping to graduate to the professional ranks.

In 2013, the race organizers sought to boost attendance at the MGP by creating a new event called the "Classic TT,"



It's a family affair: Chris Swallow (left) and his father, Bill, at the start of the Senior Classic TT.

Richard Johns parks his 1928 Norton Model 18 near the grandstand after riding over the mountain.



wherein the big-name TT riders would ride older classic and vintage machines on the Mountain Course. They also arranged for a few special events to add extra incentive for fans to come back to the island for the late August event.

The plan worked — the Classic TT has become a huge success, providing an opportunity for fans to see current top-tier TT racers like John McGuinness, Guy Martin, Michael Dunlop, Dean Harrison and others riding classic race machines from Norton, MV Agusta, Paton, Velocette, Vincent and more on the famous Mountain Course. The old machines sound and look great, and the racers aren't just playing — they flog the old bikes around at average lap speeds of almost 125mph, with some bikes going through the speed traps in excess of 170mph. For comparison, the top-level bikes at TT week in June are doing laps averaging over 132mph with speeds at times over 200mph.

Ponder those numbers for a moment. The TT course looks nothing like a proper race circuit; it's a series of country lanes on a small island in the middle of the Irish Sea. The roads are narrow, with speed limits (on any normal non-race day) between 30 and 50mph. There are no run-off areas or gravel traps. Any excursion off-course will put the rider into a hedge, a phone pole, a wall, a stone house or over a cliff. The penalty for failure is extreme. Sadly, more than 200 racers have died on the course over the years, including three riders this year (during TT week, not at the Classic TT).

In the U.S., one can see vintage motorcycle racing at a variety of road courses: Barber Motorsports Park, Mid-Ohio, Willow Springs, Road America, etc. Most of these courses are 2-3 miles in length, with perhaps 100 feet of elevation change and fewer than 20 turns. Lap times are on the order of two minutes and races are eight to 10 laps. In contrast, the Mountain Course at the Isle of Man is 37.73 miles in length, with 1,600 feet of elevation change and hundreds of corners. A good lap takes a bit under 20 minutes. Race distances

for the Classic TT events are four laps (about 151 miles). With only a few practice laps at each event, it typically takes three years for a newcomer to learn the course.

Another feature that sets the TT races apart is that they are time trials. So, unlike most other road races, there's no group start. At the TT, riders are waved off the starting line at 10-second intervals. It can be confusing, as the rider crossing the start-finish line first at

the end of any lap may not actually be leading the race — it all depends on the interval gaps between riders. It sounds complicated, but there's radio coverage around the course to follow the race, along with a quaint and ancient system at the grandstand involving scouts (boys and girls) who continually update a giant chalkboard.

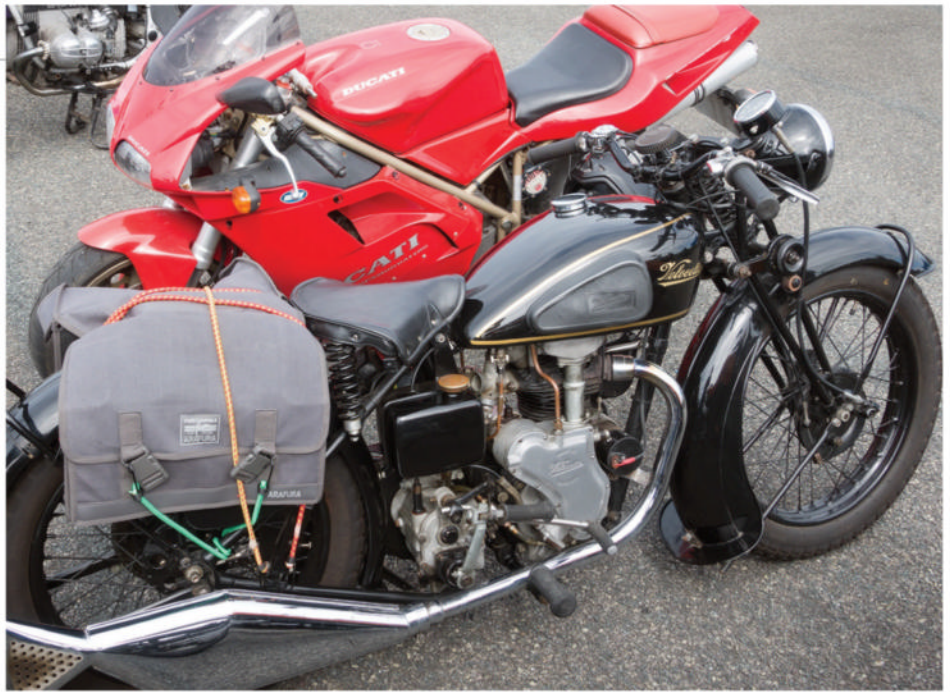
Many TT fans consider road racing on the Isle of Man to be a unique kind of competition, one that demands



Eleanor McIntyre looks on as Michael Dunlop pushes off to start his lap on the 500cc 4-cylinder Gilera replica.



Pudding basin helmets are a common sight during Classic TT week (above). A young Italian and an old Brit (right).



the utmost from the participants and exacts the ultimate price for not getting it right. Hard-core TT fans don't regard MotoGP or World Superbike riders with the same reverence reserved for pure road racers like the late Joey Dunlop (26 TT wins) or John McGuinness (currently 23 TT wins). The margin for error at the TT is infinitesimal.

For whatever reasons, top TT racers are generally from the British Isles and commonwealth countries (U.K., Ireland, Scotland, Australia, New Zealand and the occasional Yank). Their names are generally not known beyond the road racing community. Many have sponsors, but nothing on the scale of MotoGP riders — 99 percent of TT riders have 9-to-5 jobs to support their racing.

The place has a wonderful grassroots

feel. The paddock is open and TT-heroes like McGuinness, Ian Hutchinson and others can be seen amongst the fans, signing autographs and smiling for selfies. There's live music, food trucks and a concours bike show. You can buy tickets to an evening TT party, a VIP hospitality tent and/or the TT Heroes Dinner. The Heroes Dinner benefits the TT Riders Association, which provides financial assistance to injured riders

and their families, and the event offers a great opportunity to meet TT riders past and present. I went this year, and each of the more than 30 tables had a famous rider or two. Lots of autographs were being sought that night.

Rare treats

2017 marked the 60th anniversary of the first 100mph average lap, set by Bob McIntyre on a 500cc 4-cylinder Gilera



Some of the motorcycles on display at the Isle of Man Motor Museum in Jurby.



A sea of bikes, new and old, in the parking lot at the Festival of Jurby.

in 1957. Black Eagle Racing provided an exact replica (complete with dust-bin fairing) of the bike McIntyre rode on that historic lap, and the bike was ridden on a “parade” lap by current TT racer Michael Dunlop (nephew of Joey). The Gilera was waved off the starting line by McIntyre’s daughter Eleanor (she was only a month old when her father died in 1962 in a racing accident). I’d heard 500cc Gileras in audio recordings from the TT races in the mid-1950s, and the real thing was even more spine-tingling as Dunlop bump-started the bike and tore off down Bray Hill at the start of his run. Everyone was pretty sure Michael was going to try to set his own 100mph lap, and he did, at

100.5mph, from a standing start!

Rob Iannucci’s Team Obsolete brought an ultra-rare example of a mid-1960s RC165 Honda 250cc 6-cylinder factory race bike, similar to the bike that Jim Redman rode to victory in the 1965 250cc Lightweight TT race. Redman and former Honda teammate Stuart Graham were on hand this year to be reunited with the bike. It’s an amazing one-of-a-kind piece of machinery, extremely complex and high-revving (to 18,000rpm), and it makes a shriek like nothing else. Team Obsolete Racer Dave Roper rode the bike at Jurby and journo-racer Steve Plater nearly completed his full parade lap around the TT course before his ride ended when the

bike dropped a valve. Given the remarkable skill set of Team Obsolete, one can hope that the bike will be put right and brought out to future events. It’s a very special piece of racing history.

The Festival of Jurby

No racing was scheduled on the Sunday of the Classic TT race weekend, and the focus shifted to the airfield at Jurby on the other side of the island. The Festival of Jurby features vintage and classic bikes being ridden on the airfield, as well as a stunning display of machines in the paddock as well as the parking lot for the event. The variety of machines on hand boggles the mind. It only costs a fiver to attend, and there



A treasure trove at Murray’s Motorcycle Museum near Douglas (left). A white Comet and purple hair in the Jurby car park.





Team Obsolete lead technician, Josh MacKenzie, with the Honda Six (left). Josh Brookes, Senior Classic TT winner, is flanked in the Winner's Circle on the left by William Dunlop (third) and Jamie Coward (second).



are easily a couple of thousand bikes to see. Some were daily riders, but most were rare and interesting. When was the last time you saw TWO Münch Mammoths in a parking lot?

The IoM experience

You can't take a walk or visit a pub or restaurant without meeting motorcycle enthusiasts. The promenade in Douglas, the capital city, is lined with old and interesting machines and the feeling is that you're at a homecoming of sorts. Only other motorcyclists understand that the love of motorcycles is some combination of incurable affliction and spiritual devotion — the sense of community during the event is rare and special.

If you're a rider, you know what it takes to keep your machine between the lines. To see these amazingly heroic

racers, tucked in behind their windcreens, risking it all at incredible speeds is awe-inspiring. The gratification and glory that accompanies their success is immediate and palpable. The penalty for failure can be savage and final. They're living at a level of intensity the majority of us will never experience, and it's thrilling to be so close to the action. The respect and admiration the riders deserve is off the charts.

The riders aren't in it for the money, so what draws them to the TT? "It's the greatest challenge in motorcycle sport," says Malc Wheeler, a former TT racer and, until recently, the editor of *Classic Racer* magazine. "Nothing else comes even close! It's dangerous, of course, but if it wasn't, what would be the challenge or, for that matter, the point? Thankfully, around the world, a TT win, or even the fact that you faced the ulti-

mate challenge, still counts for an awful lot. For me, and every other TT racer I know, one lap of the Mountain Course is worth a whole season of other races."

The Classic TT presents an opportunity to be close to equipment that was, in its day, the state-of-the-art in motorcycle racing. Viewing Manx Nortons, Patons and MV Agustas at rest in a museum is interesting, but seeing them race, hearing them rev and smelling the hot oil and rubber is an exhilarating experience.

It takes some effort to get to the Classic TT, but it's effort well spent. For motorcyclists, it's awe-inspiring and humbling to be on the same roads where Mike Hailwood, Giacomo Agostini, John Surtees, Geoff Duke and other titans of road racing proved their greatness. It's an emotional experience you won't soon forget. Just ask anyone who's made the pilgrimage. **MC**

Planning a visit to the Isle of Man

Getting on and off the island can be a challenge, especially if you intend to bring your bike, in which case you need to book a ferry crossing from Ireland or the U.K. They fill up early, so arrange that sooner rather than later. You can also fly in from Ireland or the U.K. Bikes and cars can be rented on-island, but again, it's best to make those arrangements early.

For accommodations, there's everything from posh hotels on the Douglas Promenade to quaint bed-and-breakfasts spread around the Island. There are organizations that can help you find a place (iomtt.com/travel.aspx). If you stay in one of the hotels on the prom in Douglas, the grandstands and start/finish line are within walking distance. There are many great viewing locations around the circuit and everyone has their favorite. Roads are closed prior to practice and racing, so you need to get to where you want to be before that happens. Info about tickets for the various official events can be found online (iomtt.com/classic-tt.aspx).



A tidy Vincent Black Shadow parked in front of "Sarah's Cottage" at Jurby.



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CALIFORNIA STYLE

2018 Norton Commando
961 California road test





Story by Alan Cathcart
Photos by Kel Edge

This year commemorates the original Norton Commando's decade of production, which was kickstarted 50 years ago in April 1968, following the iconic twin-cylinder model's debut in 750cc guise at London's Earls Court Show the previous year. To mark the occasion, today's reborn Norton Motorcycles has introduced a trio of limited edition birthday bikes based on the existing Commando 961 Sport and Café Racer, as well as adding a third new variant named the California.

This new version of the Commando 961 is available in a choice of 10 different Seventies-style color schemes ranging from a retro metal-flake red to the red, white and blue combo seen here. The new Norton is distinguished from its sister models by carrying a high-rise handlebar with pulled-back grips. Otherwise identical in every way to the existing Commando 961 platform, the new model's official name is a bit of a mouthful — so take a deep breath here, folks: It's the Norton Commando 961 MK II Limited 50th Edition California, aka the Cali to you and me, as it's also known inside the company's Donington Hall factory. But what this tells you is that not only does it have the copious upgrades to its air- and oil-cooled 961cc parallel-twin engine that were introduced almost two years ago in its MK II update, but it also benefits from an all-inclusive component upgrade at no extra cost.

"We're building 50 numbered editions of each Commando model to mark its 50th anniversary," says Norton owner Stuart Garner. "The Café Racer, Sport and California will each be pimped-out with a full range of our polished billet aluminum and carbon fiber special parts, then we're discounting them back to the price of the standard model without all that, as a bit of a thank you to our customers for all the support the Commando has had over the years that's enabled it to enjoy a 50th anniversary at all. We're selling the bikes for the old 2017 flat price, which means you get about £6,000 [approx. \$8,100] worth of options included for free. Spread out over 150 bikes, that's more than a million bonus U.S. dollars of extras, so we're calling it the 'million-dollar thank you.' They're available now on a first-come first-served basis, and each limited edition bike will also have its unique build number from 1 to 50 etched onto the instrument dash."

So in the case of the California that means its £16,495 price in the U.K. (including 20 percent local tax) includes a carbon fiber front fender, rear hugger and license plate hanger, while the fully adjustable 43mm Öhlins fork, twin piggyback Öhlins gas shocks, lightweight sprocket and assorted chassis parts, are all polished brightly.

Also included is a brushed aluminum oil cooler and a chrome chain guard and headlamp bowl/bezel, while the engine has been finished in the classic combo of a silver cylinder head and polished rocker covers sitting on a black cylinder barrel, as first featured on the hotted-up Combat version of the original 745cc Commando back in 1972. A bike cover and paddock stand are also included in the price. Once the 50 limited edition bikes are sold, the California will continue in production for the same price, but without all the options included as standard, which then cost extra.



The tail fairing badge notes the 50th anniversary of the Commando (left).

The new higher bars aid in rider comfort (middle). Dual-disc Brembo brakes provide ample stopping power.

Setting a higher bar

It's the Cali's high-rise handlebar that really makes it stand out — it's what used to be termed a Western bar back in the Seventies. "We wanted to mark the Commando's 50th anniversary year with something appropriate," says Garner, 49. "Many riders like yours truly are getting a little older these days, and suddenly all our joints are a little stiffer than before! So delivering a more upright riding position is something we've been asked for that seemed a sensible move, and the 50th birthday gave us a trigger point to introduce a more easy riding Commando with nearly everything else the same as the Sport. So it's a handlebar option only, giving quite a different riding position as opposed to any



2018 NORTON COMMANDO 961 MKII

Engine: 961cc air-cooled OHV parallel twin, 88mm x 79mm bore and stroke, 10.1:1 compression ratio, 72hp @ 7,500rpm

Top speed: 130mph (est.)

Fueling: Electronic fuel injection

Transmission: 5-speed, chain final drive

Electrics: 12v, electronic ignition

Frame/wheelbase: Dual downtube chrome-moly oil in frame/55.12in (1,400mm)

Suspension: 43mm Öhlins upside-down fork w/ adjustable preload, compression and rebound damping front/Öhlins piggyback reservoir fully adjustable shocks rear

Brakes: ABS, dual Brembo 320mm full-floating discs front, single Brembo 240mm disc rear

Tires: 120/ 70 x 17in front, 180/55 x 17in rear

Weight (dry): 415lb (189kg) (est.)

Seat height: 32in (810mm)

Fuel capacity/MPG: 4.5gal (17ltr)/55mpg (est.)

Price: \$20,000 U.S. (est.)

Contact: indianmotorcycleorangecounty.com



extra levels in performance. But we've made sure that the footpegs aren't any further forward, and there's no plug-in iPod or suchlike — it's still a sport bike!"

So it sounds like this is the nearest that Norton may ever get to building a cruiser? "You're right, it's about as close as we can get to a factory Custom Norton," Garner says. "When it was first launched at the Milan Show in November we originally got some stick for the riding position on social media, but then when those same people come to try it out, they go, 'Oh — actually, it's really comfortable!' OK, so it's a good

bit away from what you'd think of as a normal Norton riding position would be today, but actually it makes lots of sense



The new higher handlebars give the California a much more upright riding position, as Alan Cathcart demonstrates.



when you ride the bike. Riders have become less hell-bent on speed in recent years and more lifestyle focused, and this meets that desire head-on — as well as looking suitably retro.”

And the verdict is ...

Guess what — he’s right. Invited to be the first rider outside the factory to ride the first-ever Cali — bearing 1/50 on the dash — I discovered immediately that the grips just literally fall to hand, in best road tester’s cliché terms. It’s a much more relaxed stance than the regular Commando 961 Sport delivers with its much lower, flatter bars, and it’s way more comfortable than the Café Racer with its clip-ons.

The high handlebar does slow the steering down slightly, and changes not only the look but also the feel of the bike beneath you — the gentlemanly neo-classic streetfighter becomes a relaxed high-speed sport cruiser. You can still chuck it around in turns, and get the best from the Dunlop Sportmax Qualifier tires spooned onto the retro-looking wire wheels, but it’s just a bit slower in transitioning from side to side than the Sport, thanks to reduced leverage from the taller bars.

The 2018 Commando family all incorporate the improvements to the air-cooled overhead valve 961cc Norton engine found on

the MK II version of the Commando introduced in 2016, as Norton design boss Simon Skinner explains. “It was a pretty significant evolution of the original 961 engine, because the motor was retooled almost in its entirety,” he says. “We have new crankcases, new cylinders, a new cylinder head, new pistons, a new crankshaft, and a new gearbox, all in order to reduce NVH [Noise Vibration and Harshness], and to improve overall quality as a means of refining the product. We’ve been able to go to suppliers that we couldn’t go to before because our volumes didn’t support it — but now they do, and so we’ve got

a different manufacturing process for those parts. They’re all diecast components now instead of sandcast, although the sad thing is that we now have to go overseas for a few parts that are simply not available in the U.K. But not only has the price for these parts come down for Norton, which increases sustainability of the business, the quality of them has shot through the roof as well. So not only have we refined the bike enormously, it’s also benefitted the business too, so we’ve ended up with a much superior product.”

One that’s also now Euro 4 compliant, with Bosch ABS linked to the Brembo brake package which sees full-floating 320mm steel discs gripped by 4-piston radial calipers, with a



Updated to MK II configuration in 2016, the Commando engine makes 72 horsepower at 7,500rpm.



The California will be available in 10 different colors, including Galactic Black, Candy Red and Canary Yellow.

240mm rear disc and 2-piston caliper.

The Cali retains the stock Commando's chrome-moly tubular steel duplex cradle frame, still with a fabricated backbone doubling as the oil tank for the dry-sump overhead valve pushrod engine. This is made in-house at Norton by the skilled craftsmen who previously plied their trade at local chassis specialists Spondon, before Stuart Garner completed his purchase of the firm and moved it to Norton's HQ at Donington Hall. This retains the same steering geometry as the Sport, with the highly polished Öhlins 43mm fork set at a 24.5-degree rake with 3.9 inches (99mm) of trail, but the wheelbase is a little shorter than before, at 55.12 inches (1,400mm).

In the saddle

Crank the powerful starter motor and the engine rumbles immediately into life, settling to a throbbing 1,300rpm idle via the 2-1-2 exhaust. This Euro 4 version of the engine seemed to have the same great torque that the 961 engine's always had, but with the revised mapping for cleaner emissions also delivering a more linear power delivery up to the 8,000rpm limiter. The engine delivers 72 horsepower at 7,500rpm, with peak torque of 49.4 foot/pounds at 6,500rpm.

Despite the gear-driven counter balancer fitted, there's a little vibration, especially above 5,000rpm, but not enough to be annoying. Low down fueling is good, like when you're just crawling along in a line of traffic — but then spot a gap and gas it up hard, and the Cali catapults you forward in a totally addictive way, thanks to its meaty torque. It pulls hard from barely off idle, then strongly from 2,000rpm upwards — this is a very friendly and usable engine, with 4,000 revs the gateway to more serious urge, and from there to where you can feel the engine peak out at 6,500rpm is the happy zone. There's no point in revving it anywhere near the rev limiter — just surf that power curve, and ride the waves of torque. The 5-speed transmission doesn't need a sixth ratio, because the engine has such a wide spread of torque and power you can change gear when you feel like it, not because you must.

The handling has always been a strong point of the Commando

961, and the Cali steers faultlessly, tipping easily and controllably into a turn on the brakes, without falling into the apex when you let them off. It feels light and agile, yet stable and forgiving, a confidence inspiring motorcycle that you can trust completely over a variety of surfaces. Hitting a bump cranked hard over in a 60mph downhill fourth-gear sweeper didn't unsettle it at all. And the Brembo twin-disc brake package provides controllable, effective stopping power with just the right degree of sensitivity from the radially mounted calipers.

Retro is cool — but only when done right. Fortunately, the Norton Commando 961 California is a properly re-engineered, successful re-interpretation of a classic-era design icon that's both functionally pleasing and fashionably stylish, while also being authentic — especially in the case of the red-white-and-blue California. It's indeed a satisfying blend of old and new, a mixture of period chilled-out attitude combined with modern civility.

It's getting on for a decade now since Stuart Garner acquired the rights to the historic British marque. Since then, heaps of hard graft entailing long hours, a good bit of risk taking, and several major changes in strategy have put the born-again Norton Motorcycles back on the map, with nearly 5,000 motorcycles built and delivered to owners around the world, including as far afield as Japan, the U.S., Canada and Australia, reflecting the company's steadily growing overseas sales — 77.6 percent of the 1,000 bikes it built in its last financial year were exported.

Garner has got Norton flying high via an ever-expanding range of which the Commando California is the latest, and arguably most practical addition. But the future holds more, including two liquid-cooled 16-valve 4-cam 1,200cc V4 hypersports models developed in conjunction with R&D gurus Ricardo Engineering about to begin production this spring, as well as their sliced-in-half 650cc parallel twin sister launched at Birmingham's NEC Show in November 2017. The 650 is due to begin production a year from now in both low-tune Scrambler and high-performance Supertwin normally aspirated guise, and will be joined soon after by a supercharged version. **MC**

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Clear skies and open highway:
Washington's Yakima Canyon
Road, SR 821.

NORTHWEST BY NORTON

A short ride the long way

Story and photos by Robert Smith

The International Norton Owners Association offers an enamel pin for those riding a Norton 1,000 miles or more to its annual rally. But the 2003 rally in Lumby, British Columbia, was only 250 miles from my home base in Vancouver. What to do?

A group of us from the West Coast British Motorcycle Club decided we could qualify by going the long way round — via Washington state, Oregon, Idaho ... and Polson, Montana, to collect fellow Nortoneer Carmine “Maggie” Mowbray.

We were all riding 850 Commandos: Steve and I were on our 1974 Mark IIs, while Ian, Geoff and Maggie rode electric-start Mark IIIs.

Washington

The North Cascades Highway (SR 20) is rated the No.

1 motorcycling road in the state by Destination Highways (destinationhighways.com). Heading east from Burlington, Washington, before crossing Diablo Dam into the Cascades, SR 20 swept us along the mountainsides, throwing a succession of delicious turns as we spun toward Washington Pass. Dense cedar and fir gave way to scrubby pines as we skimmed the snow line at the 5,500-foot summit and started our steady descent of the gentler eastern slopes.

Lunch was in the faux-western town of Winthrop — all boardwalks and livery stables — at the Duck Brand Hotel for their signature smoked duck quesadilla: delicious! We cruised across open farmland, turning south on US 97 down to the Columbia River at Pateros. Leaving Washington's narrow coastal strip behind (the only year-round green part of the “Evergreen State”), we followed the Columbia south into the Okanogan Valley. Hot, dry winds blowing up from the Sonoran Desert toast the parched ground here and sear the nostrils, while the broad, slow-moving Columbia River irrigates the region's vast fruit orchards.

The best motorcycle road in Washington: North Cascades Highway 20 (SR 20) below Washington Pass (right).

At Sunnyslope we turned west, and followed US 2 back into the Cascades to the fantasy town of Leavenworth, a chocolate-box “Bavarian” village of cuckoo clocks and cowbells. From there, we turned south again on US 97 and raced broad curves over Blewett Pass into Ellensburg. At the KOA campground, we parked between motor homes, sheltering from a blustery wind, and assessed the day’s mechanical issues. Ian’s Mark III was running rich, so we opened the Amal carbs and dropped the needles one notch. Steve had a noisy tappet, so we pulled the rocker cover and found the valve clearance way too wide. No one remembered feeler gauges, so we guesstimated the setting.

South from Ellensburg is the Yakima Canyon Road, SR 821. We raced over its sublime series of sweepers, tracking the meandering Yakima River. At Yakima, we turned west again on US 12, then climbed back through the Cascades on SR 410, finding a delirious succession of bends near the snow-lined summit of 5,500-foot Chinook Pass, Mount Rainier’s conical, snow-capped peak jumping out at us as we cleared the pass.

The Cascades are essentially a string of volcanoes running from Canada to California. Sixty-four miles south of Rainier is what remains of Mount St. Helens. In 1980, volcanologists were blindsided when half the mountain simply blew away, taking out 230 square miles of forest. Now, the bald, lopsided crater overlooks a bleak valley of stripped, sun-bleached trunks laid out like giant matchsticks.

National Forest Road 25 skirts Mount St. Helens National Park on the west side, providing access to amazing viewpoints. My Roadster holds 3.2 U.S. gallons of fuel, giving a range of 120 miles. Gassing up in Randle before heading south on FR 25, I had just enough fuel to get to Wind River just north of Carson, Washington, on the Columbia River, including the viewpoint detour. In 2003, NF 25 had just been repaved with fresh tarmac, and for



The short but spectacular 8-mile Shaniko-Antelope road, Oregon SR 218.



Daniel Vincent of Dan’s Ukiah Service in Ukiah, Oregon. Dan’s homemade signs at his gas station denounced government overspending and bureaucracy.



Camping, Norton style: All set up for the night next to Big Canyon Creek in Minam, Oregon.

over 100 miles or so we swooped along the narrow two-laner through dense forest, in a wild succession of bends. I pushed the handlebars ever closer to the road, grinding the kickstand. Just 3 miles before Wind River, my engine spluttered on its last bit of fuel, and I limped into a one-gas-pump store.

Riding any distance on old bikes, paranoia becomes your companion. I strained to hear imagined engine noises, felt for changes in vibration and watched for leaks. Potential problems stalked my thoughts. Was that a bearing? Piston slap? A tappet? No — just my tires on the steel-mesh deck as we crossed the Columbia into Oregon on U.S. 197 and The Dalles Bridge.

Oregon

It was 6:30 on a July evening, and still 102 degrees F when we rode into The Dalles, Oregon. Snagged in traffic, we crawled through the lumber town, boiling inside our leathers, engines pinging, clutches dragging. We were committed to camping, but the air-conditioned Budget Motel beckoned,

a faded trailer park of plastic trellis and kitschy garden ornaments. A cheery 60-something woman in a Kawasaki golf cart arrived to size us up. "If you're camping, you'll be better off in the city park," she said. "I'll show you."

This was too bizarre. A city park? Four Norton Commandos trailing a golf cart through an Oregon hick town? But the park was a gem: lush grass, a pool, fire pits and picnic tables! A tingling shower, sub sandwiches, a couple of Sierra Nevada ales, and all was right with the world.

After Dufur, Northern Oregon was a riding treat. The rolling grassland was sliced with ravines and chasms, while bluffs and buttes soared in stark relief, and grain silos dotted the landscape. We passed through Maupin, a colorful white water-rafting town nestled on the Deschutes River, and then veered east on US 97 to the near-ghost town of Shaniko (population 25), which was trying to re-invent itself as a living museum with board-front stores, a bank, post office — and a jail on wheels!

SR 218 south from Shaniko to Antelope amazed us, where

The Wallowa Mountains, as seen from the Wallowa Valley near Joseph, Oregon.





The author's 1974 Norton Commando Roadster, loaded with gear along US 12, which follows the Lochsa River to Lolo Pass on the border of Idaho and Montana.

we cut east to SR 19, also known as the John Day Highway. The road twists through the John Day Fossil Beds before careening across open prairie. Day is a big name in these parts. A member of the 1811 John Jacob Astor party (that went on to establish Fort Astoria on the Oregon coast), Day was kidnapped by Indians, stripped of his clothes and abandoned in the Oregon wilderness. He was eventually rescued at the Umatilla River, but died a year later.

Our next stop was in tiny Ukiah on SR 244 for gas, where Daniel Vincent of Dan's Ukiah Service supervised our fueling. (Oregon law prohibited gassing your own vehicle.) Dan, formerly a cop in Alaska, was shot in the hip during a bank heist and now walks with a cane. Ukiah's only two gas stations sat opposite each other at the town's only intersection, and Dan's gas was 10 cents cheaper. Dan was not only unpopular with his roadside competition, but told us that he was also in trouble with Oregon's environmental department for refusing to leak test his underground tanks: homemade signs on his lot angrily denounced government overspending and bureaucracy.

Heading east on SR 244 to SR 82, we camped in a beautiful forest site in Minam by the rushing Big Canyon Creek. Surveying our bikes, Ian's speedometer had died and he'd burned a liter of oil

during the day. Steve found gearbox oil contaminating his clutch, causing it to slip. Geoff's rear tire had worn right out, and he owned up that it was the original fitment — 28 years old! A couple of cold ones and fire-grilled steaks beside the churning creek made the day complete.

The next morning, in crisp sunshine under an indigo sky, we cruised east on SR 82 across the corn-gold Wallowa Valley, destination Hell's Canyon. The road to the rim switch backs through the trees along narrow terraces, with hairpin turns at each end. Though 2,200 feet deeper than Grand Canyon, Hell's Canyon lacks its spectacular view. Instead of sheer walls, the ground gently rolls away, and the grandeur of the Snake River, 8,000 feet below, was hidden from us. We thundered down the narrow forest roads into the Canyon and the tiny town of Oxbow, Idaho, exhausts burbling hypnotically on the overrun.



A quick stop on the side of the road to work on Maggie's Commando.

Idaho

Heading south down SR 71 in the Snake River's deep chasm, fresh, smooth tarmac rounded the steep cliffs lining Brownlee Reservoir. Blind twists clung to each outcrop with a sheer drop on the other side, causing heart-in-mouth moments as we strafed the canyon-side curves. At Cambridge, we joined US 95 north to Riggins, where Idaho's Salmon

Rolling along BC 3A, British Columbia's best motorcycle road.

River tumbles out of the Sawtooth Range to join the crashing Snake. US 95 climbs over a big bridge to White Bird Hill, where Nez Perce Chief White Bird and his band battled the U.S. Army in 1877. But instead we turned on to Old White Bird Hill Road, a narrow tarmac strip that snaked across the hill in a series of switchbacks.

Our next stopover was a disappointment — a rundown RV park in Kooskia, Idaho. The toilet was a Porta-Potty and the shower was a bare, unventilated plywood stall. But the Kooskia Café made up for it the next morning with outstanding chicken fried steak and eggs. Both Ian and Geoff desperately needed rear tires, so we planned to cruise bike stores in Missoula, Montana. First, though, we tracked the foaming Lochsa River, heading east along US 12 to Lolo Pass: "Winding Road Next 77 Miles," the sign said. After twisting over the pass, US 12 spat us out on to US 93 into the truck traffic going north to Missoula.

Montana

Nineteen-inch rear motorcycle tires are not easy to find, and none turned up in Missoula — until Triumph dealer Mike



Tingley called in some favors and drummed up a couple of old-stock Dunlops. We fitted these at our next stop, Maggie's lakefront home in Polson, Montana. From there, we aimed our Nortons towards Lake Kootenai, where we crossed a new steel bridge before rattling over a narrow, winding forest road of frost-heaved tarmac to the tiny town of Yaak and its notorious biker destination, the World Famous Dirty Shame Saloon.

Heading west from Yaak on SR 508 back toward Idaho was a delightful romp, though the road's sweeping turns included the odd patch of gravel to keep us awake. Maggie's bike was smoking badly, burning oil and using way more gas than it should. Then the engine quit just as we rolled into Moyie



The group pauses for a photo while crossing Kootenay Lake in British Columbia aboard the MV Osprey 2000.

"Budweiser provided shims to snug up the mufflers,
and the carbs were remounted and rejettied ..."

Springs, Idaho, after crossing the border on US 2. Pushing the bike into the gas station, we found the mufflers were loose, but that clearly wasn't the issue. Checking further, we discovered the oil tank was empty, so we added a liter. "It was OK this morning," Maggie said. And it seemed OK again when the bike restarted after a gas fill.

British Columbia

Crossing the border at Porthill, Idaho, on SR 1, we trekked back into Canada on BC 21 to BC 3A, the best motorcycling road in the province according to Destination Highways. The twisting two-laner weaves along the shore of Kootenay Lake to Crawford Bay, where we boarded the MV Osprey 2000 to Balfour and rode north on BC 31 to Ainsworth Hot Springs, B.C.

At our campsite, we spent the evening tinkering with Maggie's bike, but the next day the problems came to a head when the left carburetor fell off! A stud had gone missing and the nuts had unwound, so we made a temporary repair using vise grips to hold everything in place.

The following day we hit BC 31A, a serpentine strip that swings from Kaslo west through Kokanee Glacier Provincial

Park and down into New Denver on Slocan Lake. From there, we rode BC 6 to the Needles Ferry across Arrow Lake, continuing on BC 6 to Lumby and the rally. My odometer showed we had ridden 1,924 miles since leaving home.

Fortunately, we had five days to fix Maggie's bike before having to hit the road again. Budweiser provided shims to snug up the mufflers, and the carbs were remounted and re-jettied, thanks to the parts vendors at the rally, and Maggie's Mark III was pronounced fit.

The rally was a wild success, drawing over 300 participants and more than 200 Nortons. After six days in the saddle, I passed on the organized rides, and spent my time wandering the campsite, chatting with riders from New York, Quebec, California, meeting old friends and making new ones. Too soon it was time to return to

Vancouver, just 290 miles — an easy day's ride.

This year provides an opportunity to repeat the challenge. The 2018 INOA Tall Timber Rally runs from July 16-19, 2018, at Grays Harbor County Fairgrounds in beautiful Elma, Washington, just 200 miles south of Vancouver, B.C. Maybe I'll ride there the long way round ... **MC**

RESOURCES

The 2018 INOA Tall Timber Rally runs from July 16-19, 2018, at Grays Harbor County Fairgrounds in Elma, Washington. Info and registration at inoanorton.com/events or nortonrally.com

At the journey's end: A field display at the 2003 INOA Rally in Lumby, B.C.



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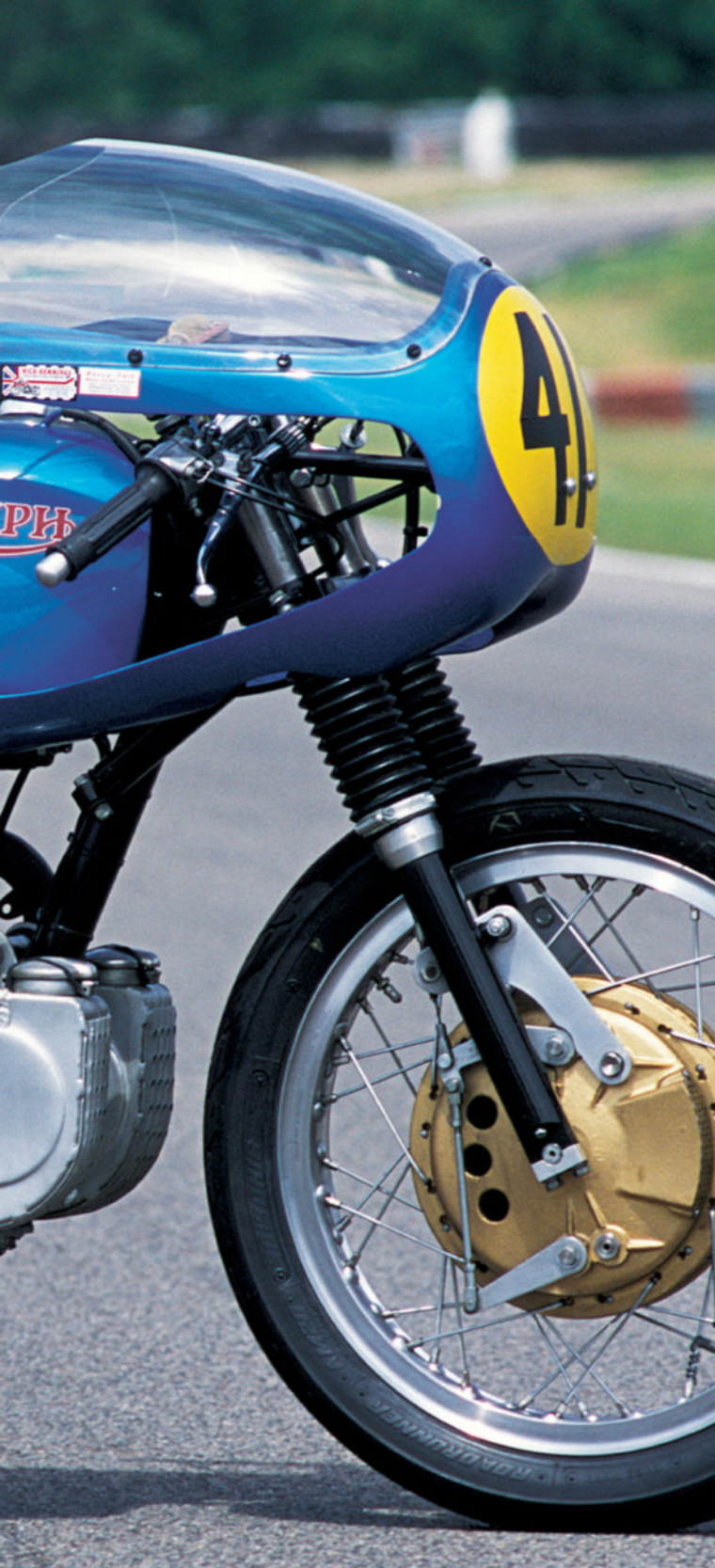
Percy Tait's Triumph 500 GP Racer



Story by Alan Cathcart
Photos by Kyoichi Nakamura

Growing up in the English countryside, just 20 miles from the historic Triumph motorcycle factory at Meriden, meant that as a kid I was well aware of our local hero, Triumph factory tester Percy Tait.

Once described as “this ageing juvenile who’s become a legend in his own lifetime,” Percy clocked at least 1,000 miles every week of his life aboard development machinery (including racing weekends, more than a million miles on Triumph twins and triples during a 20-year career) while owning a pig farm in Little Shrewley, the next village over from us. From there he commuted to his day job riding test bikes and factory prototypes that impressed me with their considerable speed and rorty exhaust notes as he blatted past my dad’s car, with me hanging out of the



passenger window reveling in the sight and sound. Percy's farm lay at the entrance to a pair of mile-long straights connected by a flat-out bend, which must have prepared our Percy for what arguably remains his finest hour in a 30-year racing history.

That moment came in the Belgian GP at Spa-Francorchamps in July 1969. It was only his third-ever race outside the U.K., riding the factory Triumph 500cc development twin in the Belgian GP on the ultra-fast 8.76-mile Spa circuit against the 500cc stars headed by Giacomo Agostini on the all-conquering 3-cylinder MV Agusta.

Racing against Tait and his overhead valve pushrod racer were the fast Linto and Paton twin-cylinder GP racers from Italy, as well as the usual phalanx of Manx Norton and Matchless G50 British singles. It was the fastest road race yet recorded, with Agostini lapping the circuit at over 130mph on the MV triple, averaging more than 125mph to a typical runaway win. Tait came home in second on the pushrod Triumph twin at a remarkable 116.51mph average speed, the only rider not lapped by Ago! It was also Triumph's best-ever finish in a Grand Prix — quite the accomplishment for a bike closely derived from a road model.

On track

Despite the significant commercial success gained in the key U.S. market from victories in the Daytona 200 in 1966 by Buddy Elmore and 1967 by Gary Nixon, Triumph refused to sanction competition activity not specifically related to their customer models. This meant an endless succession of Production TT and mainland victories with modified 650 Bonneville road bikes, but absolutely no form of open-class road racing. In typically short-sighted form, this ignored the potential market for a fast, dependable privateer mount for the 500cc class.

For fans at home in Britain, Triumph didn't have the same focus on racing as its U.S. affiliate, whose success had given a boost to American sales as well as a more sporting identity to the Tiger 100. In England, development engineer Doug Hele and his team of mechanics raced on weekends with modified road bikes, stretching budgets to "test new parts under extreme conditions." But it was only really at the urging of Triumph's U.S. importers that the 490cc T100 engine was tuned for racing by Hele and his team in October 1965, in response to the AMA's 500cc capacity limitation for overhead-valve engines against 750cc sidevalves, i.e., Harleys. The results were startling: From a standard output of 35 horsepower at 8,000rpm, Hele soon produced 45 horsepower at 8,200rpm, and by 1969 and Tait's Spa exploits, 52 horsepower at 8,700rpm, all measured at the gearbox, resulting in a top speed at England's MIRA test track of 139mph.

Restoring the racers

Since its founding in 1974, Mick Hemmings Motorcycles has been a premier one-stop shop for Norton and Triumph enthusiasts around the world. Which explains why, back in 1982, founder Mick Hemmings was quick to answer an ad by then retired Percy Tait, who owned a Suzuki dealership in nearby Coventry and was selling a stockpile of Triumph factory racing hardware.

Short of the £3,000 asking price (about \$5,200 in 1982), Mick teamed up with fellow Triumph classic racer Rob Prior to buy the cache of parts, ending up with the very special works engine used at Spa, which Percy confirmed in writing was his second-place



1969 TRIUMPH 500 GP

Engine: 499cc air-cooled OHV parallel twin, 69mm x 65.5mm bore and stroke, 11.5:1 [10.3:1], 52hp @ 8,700rpm (at gearbox)

Top speed: 139mph at MIRA speed oval

Carburetion: Two 1-3/16in (30mm) Amal TT w/single central remote float

Transmission: 4-speed, chain final drive

Electrics: Lucas energy transfer with remote contact breaker assembly

Frame/wheelbase: Modified Triumph single-loop tubular steel frame/55in (1,397mm)

Suspension: Telescopic forks front, dual S&W shocks rear [dual Girling]

Brakes: 8.3in (210mm) Fontana four-leading-shoe drum [7in/178 mm Triumph twin-leading-shoe drum] front, 7in (178 mm) Triumph SLS drum rear

Tires: 90/90 x 18in front, 110/90 x 18in rear

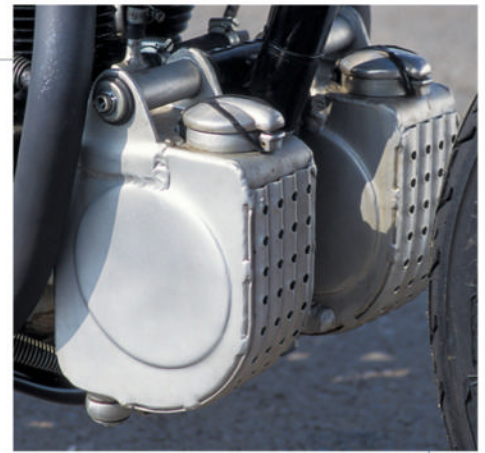
Weight (dry): 292lb (132kg)

Year of construction: 1969 [2003]

500 Daytona Replica data shown in brackets if different

power unit. The whereabouts of the special one-off duplex Reynolds chassis that housed the engine for Percy's 1969 Spa is unknown. But the stash included a modified single downtube T100 road frame from the factory race shop, with a lowered seat and extra stiffening side tubes added on each side back in 1969 by chassis guru Rob North, together with beefed-up gusseted swingarm pivots. This now houses the works GP engine.

Percy confirmed this was the chassis he used in the TT that year with the 5-speed engine that chucked him off when the gearbox locked up, and the frame shows signs of repair that seem to confirm this. A works bronze-welded Reynolds 531 swingarm is fitted, with short S&W shocks as used by Triumph's U.S. race team. Up front are a pair



The Fontana four-leading-shoe front drum (far left). The rubber-mounted Speedwell oil tanks (above).

of works 1-5/16-inch forks with shorter 19-inch stanchions and revised internals, matched to a genuine 8.3-inch Fontana four-leading-shoe drum brake identical to the one used by Percy to stop a bike weighing just 292 pounds dry — much lighter than any Manx Norton single of the era, but with comparable performance. The rear brake is a 7-inch Triumph single-leading-shoe item with a ventilated back plate — a common factory race shop mod.

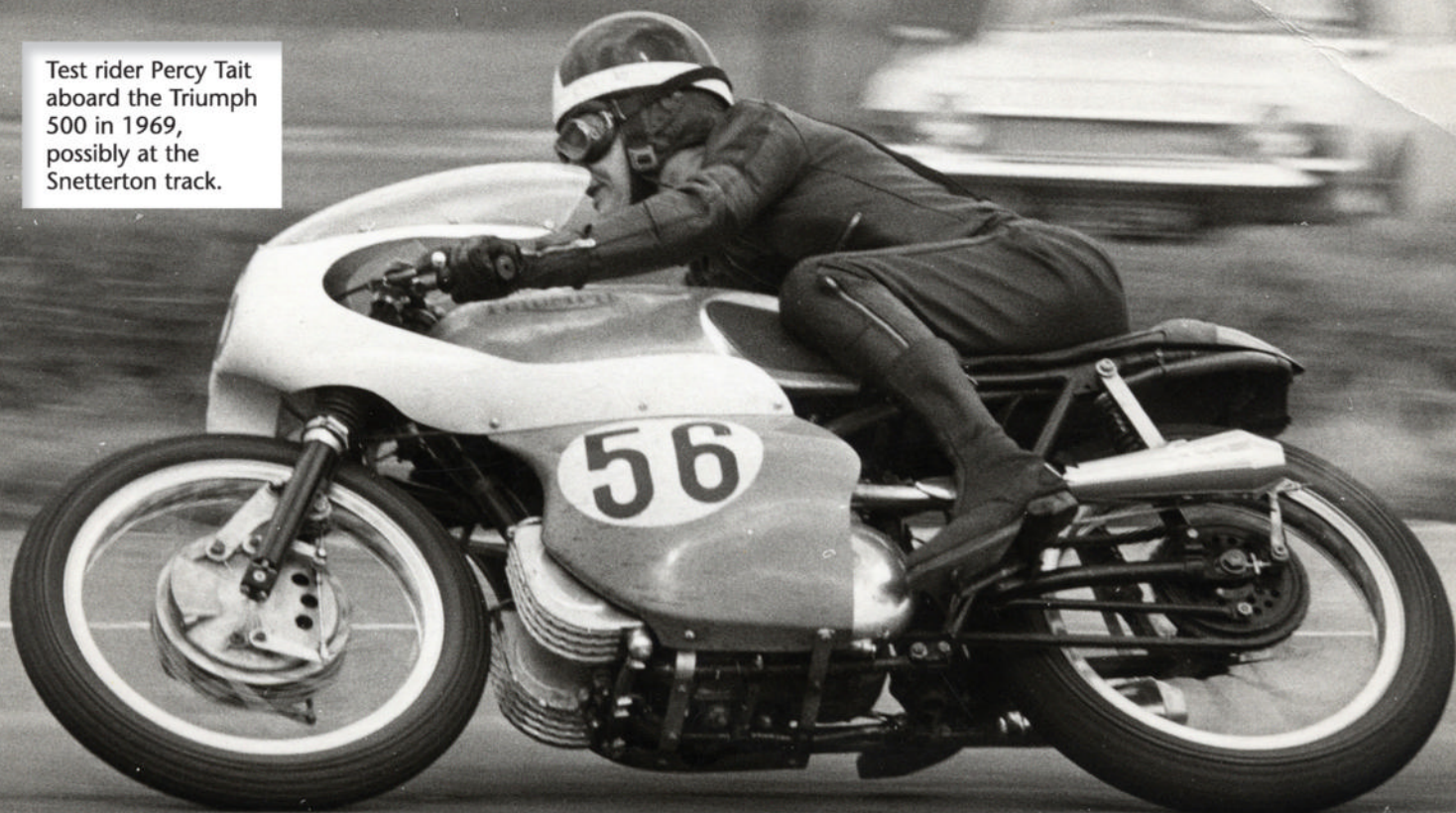
Another "works part" is the tennis ball sliced in half mounted to the bike, which carried a damp sponge for wiping flies off your goggles.

Mick reassembled the Tait treasure trove into a complete



Alan Cathcart on the Percy Tait 500 GP, running without the lower fairing sides.

Test rider Percy Tait aboard the Triumph 500 in 1969, possibly at the Snetterton track.



motorcycle, with advice from frame wizard Arthur Jakeman and engine specialist Jack Shemans, Hele's two key assistants in developing the bike. He's since demonstrated it at numerous events, including the Goodwood Festival of Speed. "I won't race the Triumph, because if something happened to the engine, it'd be impossible to repair because the parts just aren't there, and there's no means of replacing them," Mick says. "That's why I run it with just the top section of the three-piece fairing, without the side panels, so people can see the engine and appreciate just how special it really is."

Details

The basis for this works racer is a modified dry-sump Tiger 100 road engine using essentially the same materials as stock, improved mainly thanks to Hele's painstaking development and the mechanical expertise of Shemans. Against a stock bore and stroke of 69mm x 65.5mm, the 490cc T100 engine now displaces 499cc thanks to a mild over-bore and 0.040-inch oversize pistons — Triumph's common practice at the time for their 500-class race bikes. The roller bearing, one-piece 360-degree crankshaft is of highly polished EN24 steel carrying equally polished stock alloy connecting rods topped with sandcast pistons delivering 11.5:1 compression, with a pronounced squish thanks to modified crowns and an altered combustion chamber in the carefully reworked 8-stud cylinder head.

The head has tapered inlet ports and special valve seats machined to produce a slightly wide valve angle to accommodate bigger 1-15/32-inch inlet and 1-5/16-inch exhaust valves. It's also been welded up to space out the four outer holding-down bolts to stop the assembly moving because of the squish bands, which Shemans spent three days scraping by hand into the head. Quite radical TH6 camshafts with greater lift and duration than anything used on a Triumph racer of the period are employed, with alloy pushrods, S&W valve springs, titanium valve caps, and

polished, lightened line-contact rockers, hence the special magnesium rocker boxes.

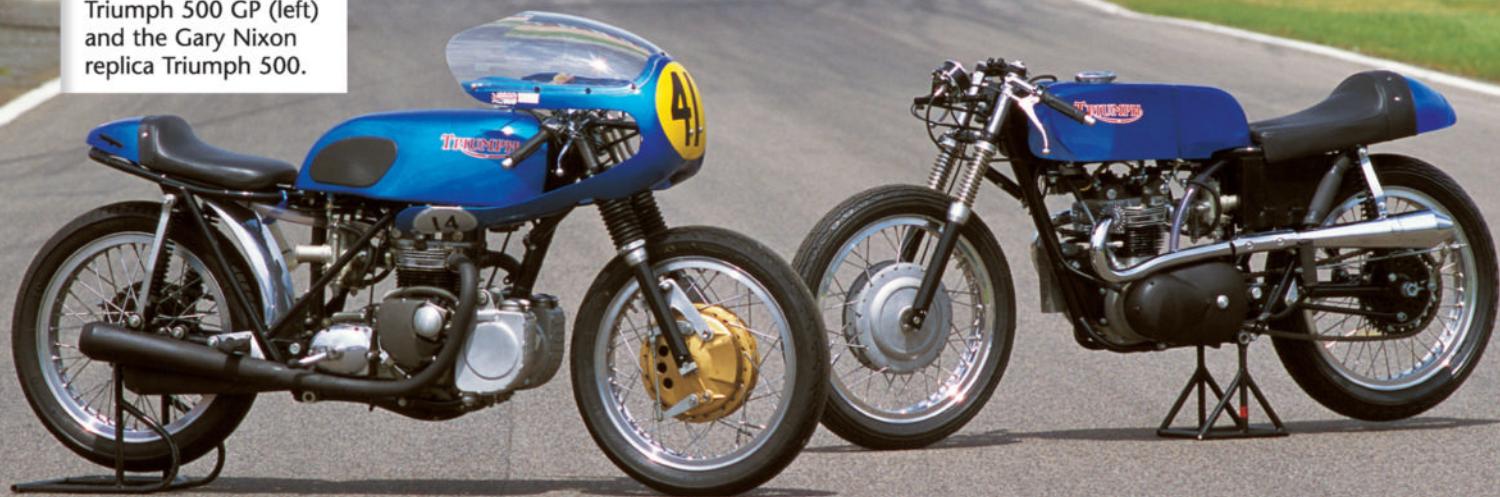
Individual reverse-cone megaphone exhausts are fitted, together with a pair of 1-3/16-inch Amal GP2 racing carburetors with a single central matchbox float chamber. Other trick hardware includes twin rubber-mounted Speedwell oil tanks carried low down in front of the crankcases, with fluted heat radiators in their leading edges protruding forward of the lower fairing sides (when fitted) for extra cooling. The outer covers on the engine are magnesium, the right carrying the Lucas 3ET Energy Transfer ignition unit driven off the exhaust cam via an Oldham coupling, with remote contact breaker assembly and an alternator: This does the work of a magneto in jettisoning a battery, but gives a

better spark at the 42-degree fixed advance. After his painful Isle of Man experience, Tait opted for the team's established 4-speed close-ratio gearbox for Spa. However, that special gearbox wasn't in the bits Hemmings acquired, so the bike uses a kit cluster fitted in the works GP casing, but with no provision for a kickstarter, though the standard duplex primary chain and three-spring oil-bath clutch are retained, the latter with an aluminum basket.

After reassembling the Tait bike, Hemmings kept going to produce a second 500cc Triumph racer from the parts haul. "I had enough bits to build a second engine almost identical to the genuine Spa motor," he says, "which originally was going to be a spare for the first bike. But included in the stock were works Daytona 200 fuel and oil tanks, another set of works forks, and this fascinating front hub made from aluminum, which was probably one of the bits Triumph used to cheat with in Production racing. It's only a twin-leading-shoe design, but in its way it's more special than the Fontana. So we took a standard T100 frame, which Martin Russell modified to accept the right-hand megaphone exhaust, to build a replica of the bike Gary Nixon and Dave Aldana raced in the U.S. in 1968, with 19-inch wheels

"The Percy Tait works 500 is a significant bike that represents the end of an era."

The Percy Tait Triumph 500 GP (left) and the Gary Nixon replica Triumph 500.



and the one-up, one-down exhaust layout. I had a good chat with them about riding the bikes when they came over to race in the Goodwood Revival in 2003, and they gave me lots of tips," Hemmings says.

On track

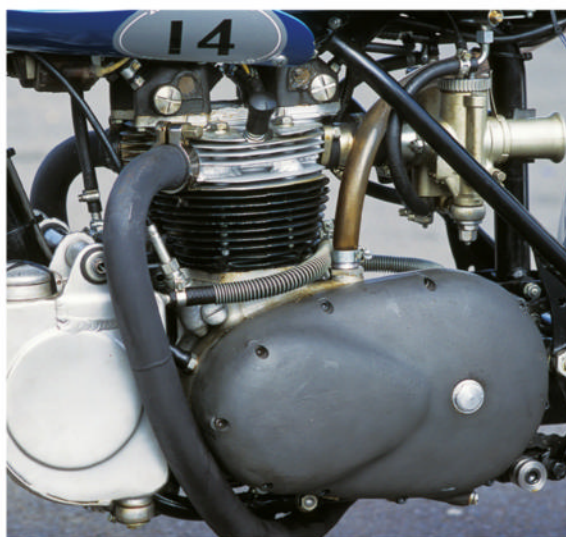
Having completed this second bike, Hemmings was kind enough to invite me along to ride it on its shakedown outing — as well as to sample the Percy Tait GP racer that led to its creation. Firing it up on the rear-wheel starter produces a concert performance from the twin open exhausts, stamped with the distinctive trademark note of a Made-in-Britain 360-degree parallel twin — and also the distinctive vibration of said layout, making it necessary to park the Triumph on level ground while warming it up, else it vibrates its way down the hill on the stand! "Yes, it does buzz a bit," Hemmings admits, "but Ray Pickrell claimed they used to smooth out around 10,000rpm, and that's why he revved them so high — but then he didn't have to pay for the bits for mending them! 9,000rpm is tops, because there's no more power higher up, even with the trick cams."

However, persuading the parallel-twin engine to rev that high proved an acquired skill, because though it pulls hard and strong from way down low, there's a hefty flat spot between 5,000 and 6,500rpm which means you have to wind it up on the smooth, light-action clutch out of slower turns. Clutch it hard, and the twin will pull really strongly in second gear to the 9,000 rpm change-up point, with a swift, precise change on

the direct, one-up, right-foot lever to third, and then top. "It's a real acquired skill riding this bike hard," Hemmings says, "because rather than the carb needles or jetting being faulty, I'm sure the flat-spot is a combination of the extreme cam design and the megaphone exhausts, which give the impressive top end performance. That's why it went so well at Spa — lots of long, fast stretches taken wide open, rather than fiddly sections where you'd have to use the clutch a lot to coax it into the powerband. Horses for courses ..."

Well, yes — except that this flat spot coincides with the worst of the vibration, which, though it smooths out a little above 7,000rpm, is so finger numbing after just a handful of laps, you're left with admiration for Tait's powers of endurance in putting up with this for an hourlong GP race. Looking at the heavy GP carbs assembly, I wonder if this isn't the source of the power delivery problem: Hemmings had to use standard 500 Daytona mounting rubbers, rather than the unobtainium special canvas-reinforced rubber manifold connectors employed by Hele & Co. back then, carefully chosen to prevent the fuel frothing, and to thus optimize carburetion above 6,000rpm.

The Triumph has a much lower build than an upright-cylinder G50 single or comparable Manx, so you sit lower on the bike in what is however a relatively rangy, quite comfortable riding position. The Triumph's low build makes it easy to flick from side to side, both in slow corners like the chicanes, or in faster turns on the power. It's



The ignition unit, driven off the exhaust cam via an Oldham coupling, on the right engine cover (top).

The Triumph has a lower build height than a comparable G50 or Manx, which makes the bike very flickable.

also more stable over bumps because of this. This bike is made for faster circuits — especially as it stops so well from higher speeds, with the wonderful response of the best drum brake in the business up front. Brake maestro Daniele Fontana knew his trade, that's for sure.

Switching to the Nixon replica for its maiden shakedown run proved interesting, because though the carburetion wasn't right and it hit a wall at 6,500rpm, which it was impossible to coax it through on the clutch, there was much less vibration below this mark than on the Tait bike, making it more enjoyable and effective to ride. Playing around with the needles and needle jets gradually improved things a little, so that by the end of the afternoon I could get it revving to 8,500rpm. When Mick gets it set up right, the Nixon replica will be a good ride, especially since it handles as well as the genuine Tait GP bike, even on the triangular tires.

The Percy Tait works Triumph 500 is a significant bike that represents the end of an era, the ultimate stage in Triumph's development of the T100 engine that had earned two Daytona 200 victories, as well as that runner-up slot in the Belgian GP. However, the advent of Honda's CB750 4-cylinder in 1968, and



BSA/Triumph's own 3-cylinder range, saw U.S. road racing rules changed to Formula 750 for 1970, one year after the lifting of the overhead valve capacity ceiling to 750cc for the AMA dirt-track series, spelling the end of the trail for Triumph's 500cc racers in America. From then on, Triumph's racing R&D was concentrated on the Rocket-3 and Trident models, using the lessons learned on Tait's 500 twin to quickly develop a potent pushrod 3-cylinder challenger to Honda's overhead-cam 4-cylinder. At the end of 1971, Hele and his team even had the ultimate satisfaction of turning the tables on Agostini and MV Agusta, when John Cooper on his BSA 3-cylinder twice defeated the Italian star pairing in the space of one week, at Mallory Park and Brands Hatch. I bet that made up for Percy Tait almost being lapped two years earlier at Spa! **MC**

Alan Cathcart aboard Mick Hemmings' Gary Nixon replica Triumph 500.



THE BIRMINGHAM BLOWER

Building a 1939 Velocette Roarer replica from scratch



Story and photos by Robert Smith

It's been famously said that as far as internal combustion engines are concerned, there's no replacement for displacement. But actually, there is.



As well as displacement, the power output of an internal combustion engine depends on its volumetric efficiency; that is, the volume of air/fuel mixture that can be fed into the combustion chamber on the induction stroke. In a naturally aspirated engine, volumetric efficiency is sometimes limited by restrictive intake tracts and/or valve timing.

Just as important is the density of air the engine is breathing, which depends on temperature and atmospheric pressure. Cold air is more dense than warm air. And atmospheric pressure is affected by altitude — the higher you go, the less dense the air. So how can you improve volumetric efficiency, and therefore increase power, assuming timing and intake tracts are already optimized?

This was the challenge piston-engine designers wrestled with during the 1920s and 1930s — especially in the aircraft industry. As aircraft flew higher, the density of the air their engines breathed was reduced. That meant their volumetric efficiency fell, leading to a loss of power at altitude. At 10,000 feet, for example, air is less than two-thirds as dense as at sea level. The answer was to push more air/fuel mixture into the intake so its density could be maintained as the aircraft flew higher. Airplane engines soon featured some sort of compressor: either a supercharger (driven mechanically from the crankshaft), or a turbocharger (driven by exhaust gases).

Designers soon realized that a compressor could push volumetric efficiency even higher by squeezing the intake mixture above atmospheric pressure — called “boost.” As an example, over the six years of World War II in Europe, the output of the Rolls-Royce Merlin engine was doubled from around 1,000 horsepower to over 2,000 horsepower almost exclusively by improvements and upgrades to the supercharger. The Merlin's displacement of 27 liters never changed, but using a 2-stage, 2-speed intercooled supercharger added more than 30mph to the Spitfire's top speed and 7,000 feet to its service ceiling — keeping its performance on par with Germany's fastest fighter, the Focke-Wulf 190.

On the ground, motorcycle and automobile engineers saw the performance potential of supercharging in racing. By the late 1920s, Mercedes-Benz and Bentley were racing supercharged cars, with development culminating in the 600-plus horsepower Mercedes and Auto Union “Silver Arrows” of the late 1930s. BMW developed the WR750 supercharged race bike, setting several land speed records between 1930-1935. The later BMW RS255 (*Motorcycle Classics*, September/October 2012) won the Isle of Man TT in 1939, and Gilera's supercharged Rondine (*Motorcycle Classics*, January/February 2018) won the last GP race before World War II, the Ulster.

That's not to say Britain's bike makers ignored this trend. Velocette experimented with a supercharged KTT overhead cam single in 1931, producing the motorcycle known as “Whiffing Clara.” Perhaps the most ambitious attempt to harness the technology was the AJS V4 of 1935 (*Motorcycle Classics*, January/February 2011). The prototype single overhead cam V4 was never fully developed, but was intended to be supercharged and liquid cooled. Meanwhile, over at the Velocette works in Hall Green, Birmingham, chief designer Charles Udall had laid out a unique design for a 500cc parallel twin that was designed specifically to use supercharging.

The Roarer

Through the 1930s, Velocette and Norton dominated the 350cc and 500cc classes in the Isle of Man TT and other Grand



1939 VELOCETTE ROARER REPLICA

Engine: 498cc air-cooled supercharged SOHC parallel twin w/two counter-rotating cranks, 68mm x 68.25mm bore and stroke, 7.5:1 compression ratio, 54hp @ 4psi boost (est.)

Top speed: 140mph (est.)

Carburetion: Single Amal 10TT9 w/Shorrock-type supercharger

Transmission: 4-speed, shaft final drive

Electrics: Lucas AC2 magneto

Frame/wheelbase: Steel tube frame/55in (1,397mm)

Suspension: Girder fork front, dual shocks rear

Brakes: 8in SLS drums front and rear

Tires: 3 x 19in front, 90/90 x 18 in rear

Weight: 350lb (159kg) (est.)



The Roarer doesn't have a speedometer, but it does have Smiths tachometer and a boost gauge (left).

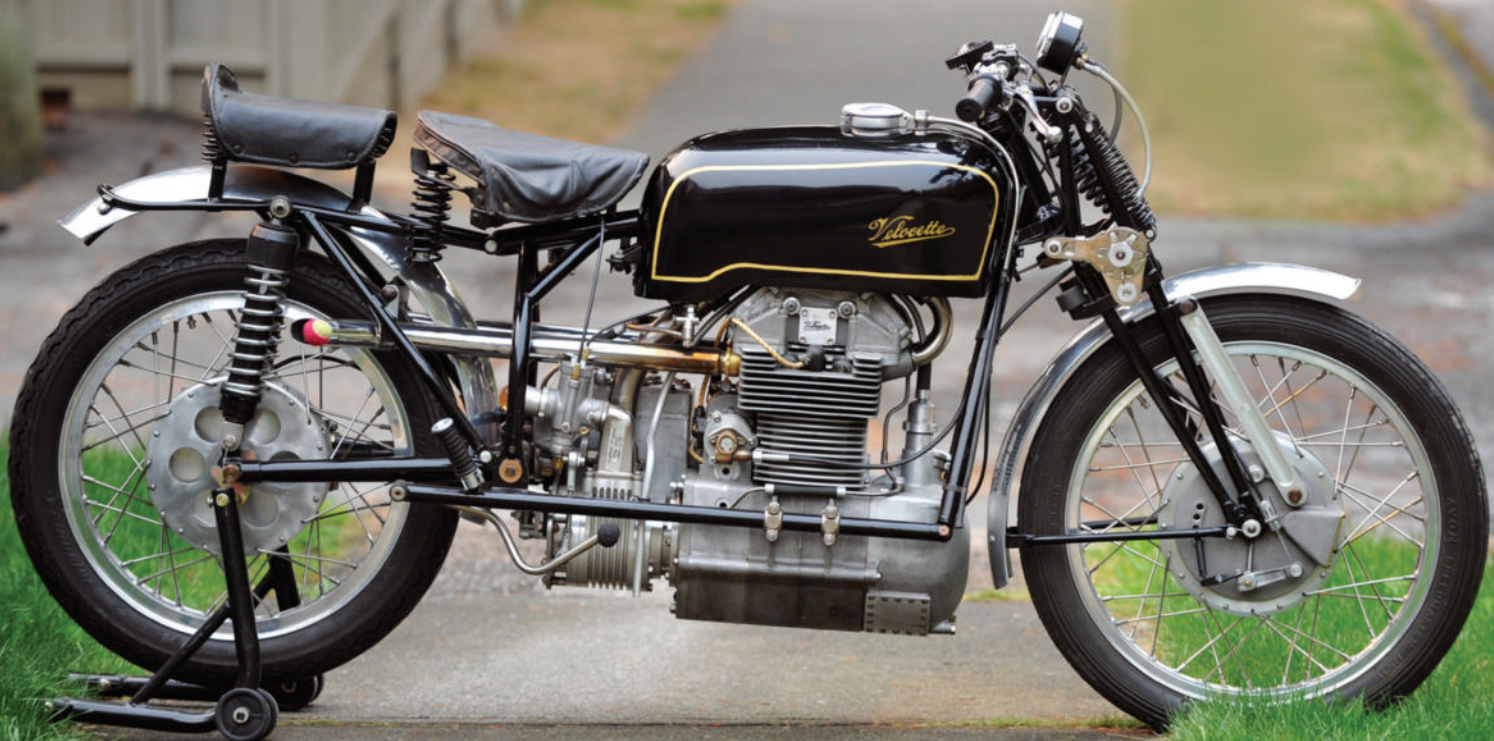
geared together.)

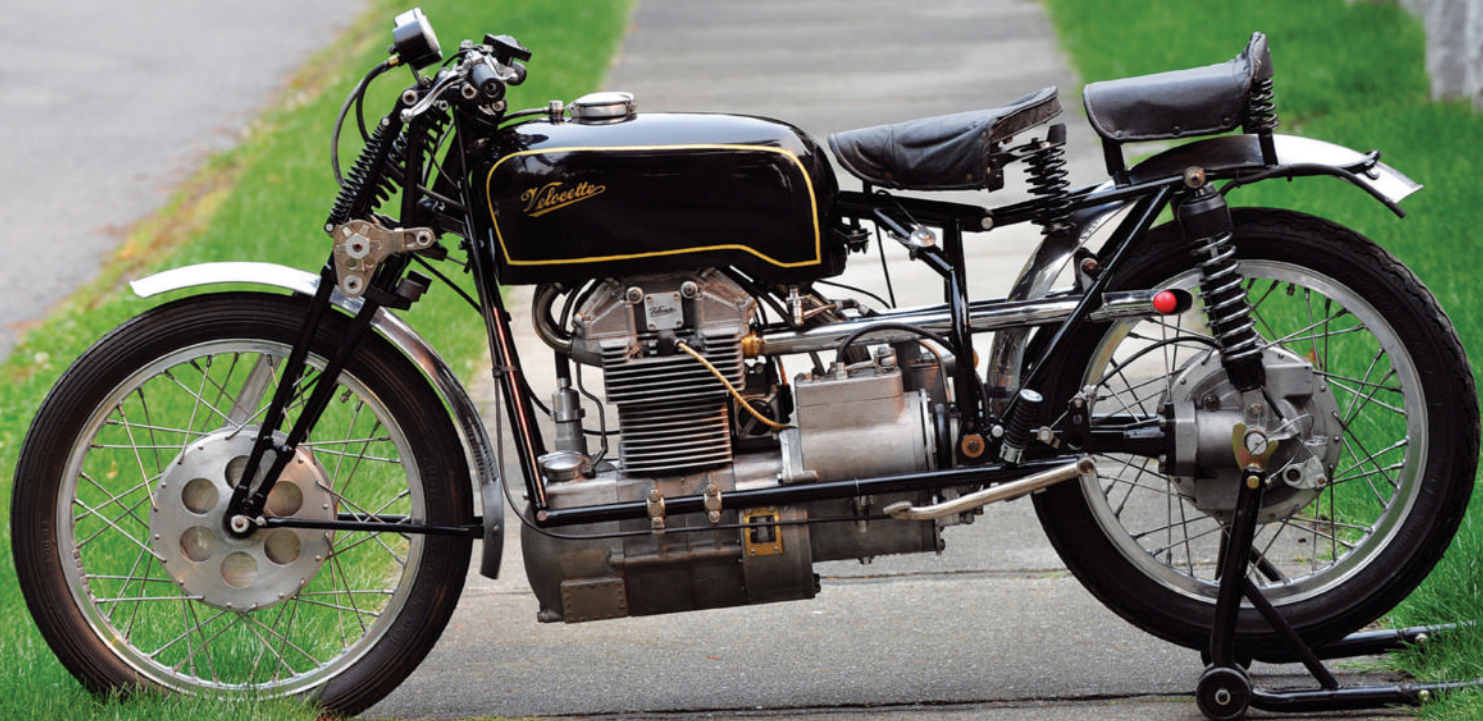
This clever arrangement incorporated the advantages of BMW's RS255 (its even firing order, for example) but the dual counter-rotating cranks eliminated torque reaction and negated the gyroscopic effect. The design also meant a more compact powertrain and eliminated any problems of ground clearance, a potential issue with the BMW's horizontal layout. And while BMW's flat twin reduced primary vibration, the Roarer's parallel twin would not. Though vibration may be an issue for a street bike, it was of less concern in a racer.

Udall's design made good use of this unusual layout. One crankshaft drove a supercharger behind the crankcase, while the other crank drove the clutch, gearbox and shaft drive to the rear wheel. The Roarer's two pistons ran in a common light alloy cylinder block with iron liners, capped with separate "hemi" cylinder heads. A train of gears drove a vertical bevel gear shaft to the two single overhead camshafts operating two

Prix races with their overhead cam singles. But by 1937, it became clear these machines would soon be outclassed by the supercharged BMW twins and DKW 2-strokes. Udall was clearly impressed by the BMW, but was also aware of a major flaw in its design — at least as far as a race bike was concerned. With the engine crankshaft mounted longitudinally, the BMW engine produced significant torque reaction, which either wanted to sit the bike up or increase its lean angle when power was applied in a turn. There was also a considerable gyroscopic effect from the crankshaft, which made the bike resistant to turning.

Udall planned a longitudinal engine, like the BMW, but his clever design eliminated both of the BMW's handling issues. Instead of two pistons running on a common crankshaft, Udall's engine had two crankshafts, each aligned along the axis of the motorcycle, not across it. The two crankshafts were geared together such that the two pistons rose and fell together but with the cranks rotating in opposite directions. (Michael Cysz employed a conceptually similar design in the MotoCzysz C1 V4 engine, which also used two longitudinal crankshafts





valves per cylinder. The cylinder heads were designed with rearward-facing exhaust ports, implying that liquid cooling would eventually be used, as the exhaust headers were at least partially screened from cooling air.

But there was another likely reason for the unusual layout. In a supercharged engine, it's important to provide a "plenum chamber" between the blower and the intake ports to smooth out pressure pulses from the blower, and to allow the mixture to cool after being heated in the compression process. Routing the intake manifold over the top of the engine to the front allowed a larger volume for the plenum, and meant the manifold and intake tracts got more cooling air, increasing the density of the mixture.

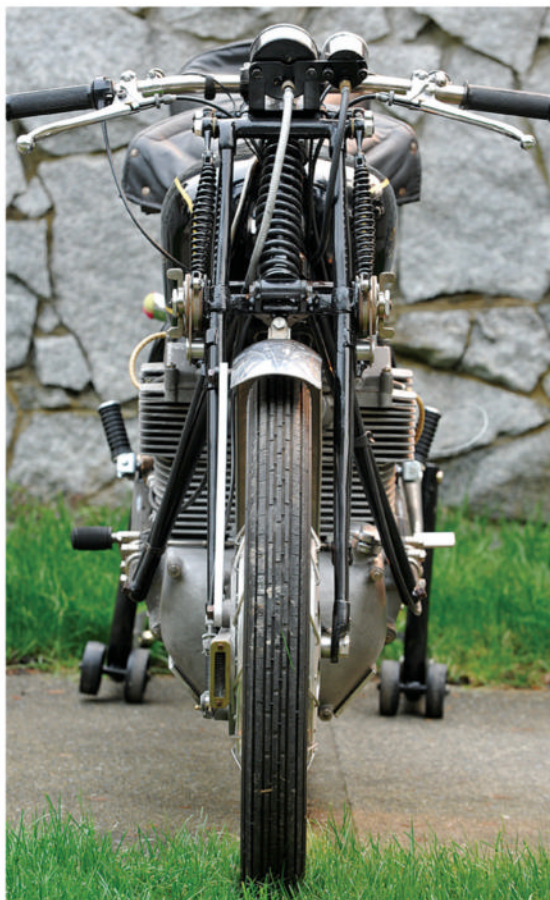
The Roarer also used the latest in rear suspension (swingarm with coil spring/damper units) but with conventional girder front fork. The bolt-up steel tube frame ran on spoked wheels with single-leading-shoe drum brakes.

Unfortunately, the Roarer had only one serious outing, in 1939. The great Stanley Woods, recently moved to Velocette from Moto Guzzi, took the Roarer out in practice for the Isle of Man TT. But the engine experienced overheating problems and was pulled from the race. Of the prototype, it was said that it "steered like a dream and was turbine smooth."

With the onset of hostilities, Velocette's focus shifted to military production, and when the FIM (the

worldwide motorcycle sanctioning body) banned supercharging in 1947, the Roarer project was abandoned.

Just one prototype was built. It languished at the Hall Green works until it was dismantled, the engine internals removed to reduce weight, and the shell displayed at U.K. motorcycle shows during 1956. Between then and when it was acquired by Velocette guru Ivan Rhodes, the internals had either been lost or rusted away. Rhodes restored the Roarer to working condition, and it has since been run occasionally on racetrack parade laps. It was the only Roarer in existence until ...

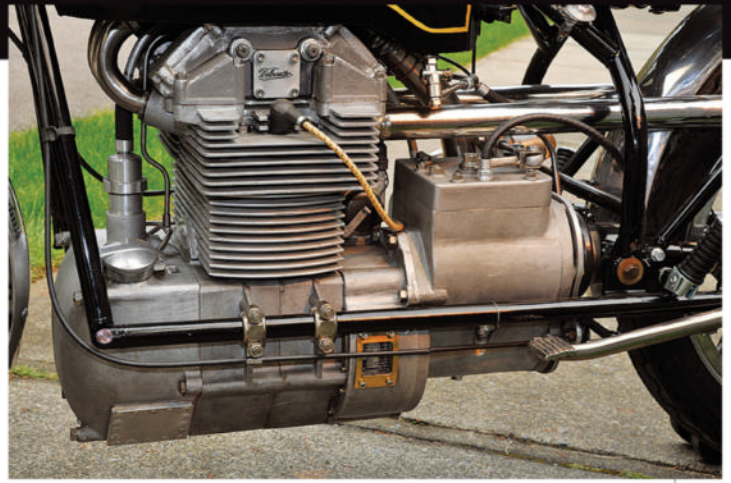
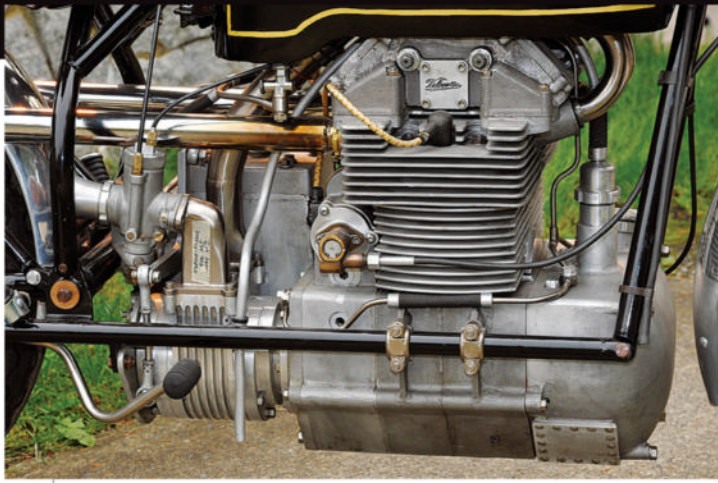


The Roarer uses a swingarm suspension at the rear, but a conventional girder fork at the front.

Dan Smith's Roarer replica

Dan Smith, Vancouver, British Columbia, considers the 1930s to be pretty much the high point of British motorcycle design. And he has a good case. After World War II, the mass-produced bikes were almost exclusively parallel twins. Smith has built — from scratch — three of the most interesting motorcycles from the pre-war era: a Vincent series A twin, the 1935 AJS V4, and most recently, the 1939 Velocette Roarer. "The three most sophisticated, state-of-the-art engines that came out of the U.K. before the war were the Roarer, the AJS V4 and the Vincent A-twin," Smith says.

So why take on such a difficult and complex build? "You're looking for the challenge," Smith says. Smith started the process, as he did with the AJS, by extrapolating



The single Amal 10TT9 carburetor sits on top of the Shorrock-type supercharger at the right rear of the engine (left).

the dimensions from a cutaway drawing in isometric projection, typical of the kind used in magazine illustrations at the time. This painstaking operation meant re-drawing each component in turn, taking dimensions from the cutaway. "Working off this, you start putting something on paper and then you move on to another section, and then you realize that that doesn't fit, so you have to go back and rub out the first one and then you move up the ladder as you go along," he says.

Smith did get some help. Upon hearing that Smith was working on a replica, Roarer prototype owner Ivan Rhodes volunteered to assist. Smith sent Rhodes copies of the engineering drawings he had produced, and Rhodes was able to confirm or correct the dimensions. The Roarer has a complex set of engine castings, including five that make up the crankcases. Rhodes was also able to confirm the deck height for the Roarer's cylinder block. From the stroke length, that gave Smith the required rod length for the Suzuki pistons he planned to use.

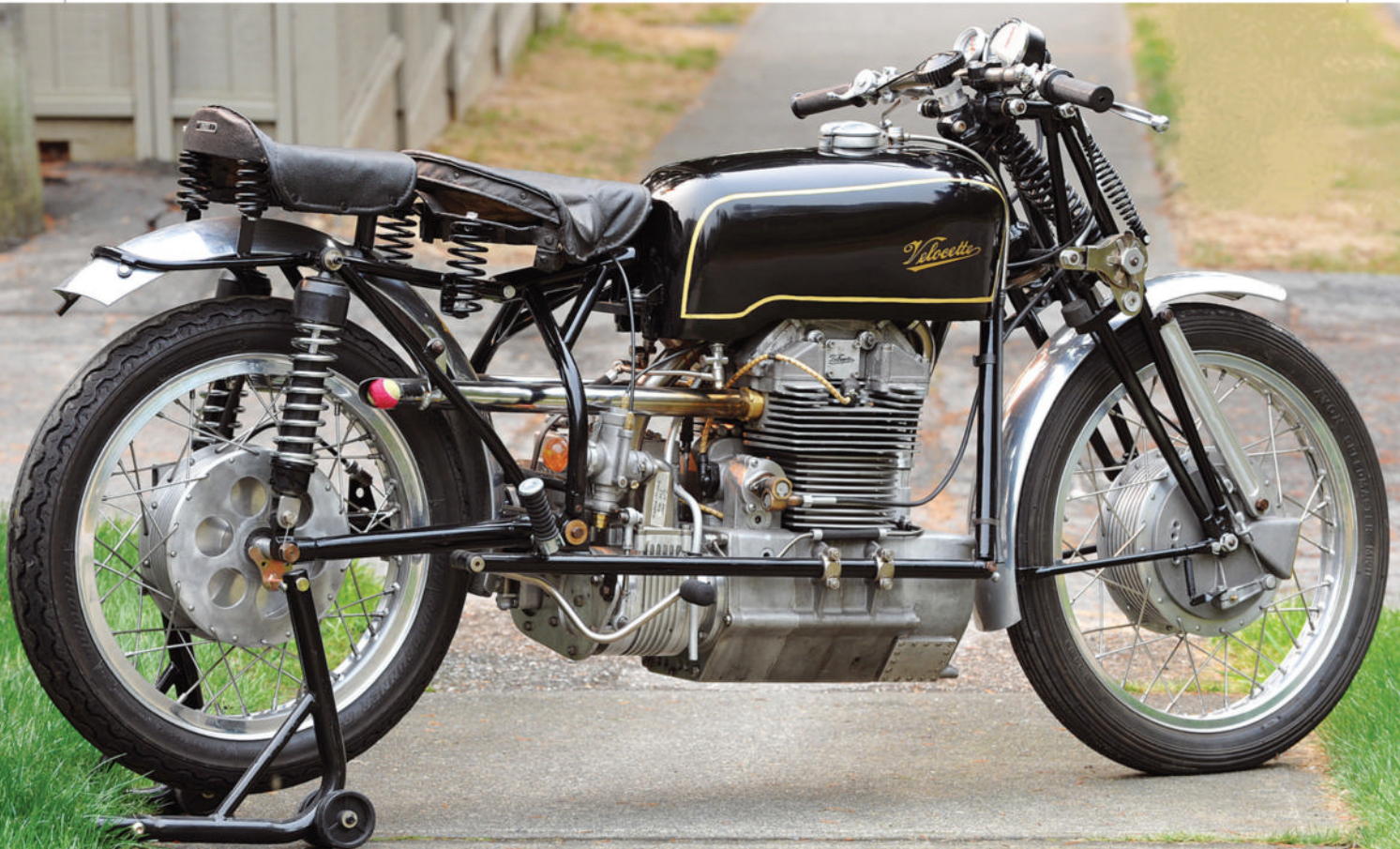
"One thing that I was surprised that I got from Ivan was that it was a 100-percent balance on the motor on each crank, and I

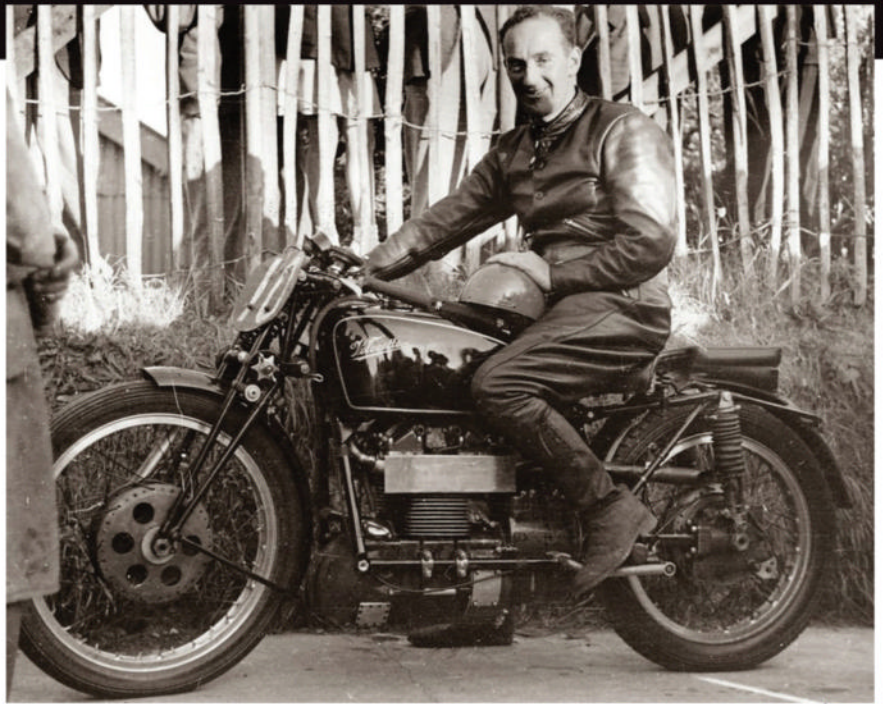
would never have done that," Smith says. "And being a vertical twin that's geared together, the 100-percent balance is just fine. It's a very smooth motor."

To get the engine cases made, Smith produced patterns from wood, then had them cast in alloy by Vancouver's Hastings Foundry (hastingsbrass.com), finishing the machining in his own shop. With the cases complete, he moved on to the cylinders and heads. "You move one step at a time and complete the first step before you go to the second step," he says.

Especially complex was the bevel gear drive to the two (one for each cylinder) overhead camshafts. A train of gears from the crankshaft drives a vertical bevel shaft through the cylinder heads to another set of bevel gears driving the two camshafts. The valves use hairpin springs from a NSU Max. "You have to make all this to pull together and get no backlash in the bevel gears," Smith says. "And then you can only assemble it one way. And you've got to do your valve timing. It's a bear to assemble. But when I'm building it, it all makes sense."

Getting all the internal oilways right was one of many





Dan Smith and his Roarer replica (left). Racer Stanley Woods at the 1939 Senior TT aboard the original Roarer (right).

challenges. "You have to figure out how everything is lubricated. Putting the oil pump [from a BSA] in and then making the gear drive to it, is all fairly straightforward," Smith says.

As well as the pressure feed to the engine bearings, the Roarer's gearbox and final drive are also lubricated from the oil pump. "You have to get the details and go through with it from one end to the other," Smith says. "It's all internal oilways drilled through. The main gears are lubricated with a nozzle, and then the oil goes into the final drive. It's all pressure lubricated. So that takes a lot of head scratching. It's not complicated, it's just hours, and hours, and hours ..."

Another unconventional aspect of the Roarer was the gearbox. Instead of a conventional countershaft gearbox with a layshaft and concentric input/output, the box has only two shafts — input and output — with direct drive in top gear. The bevel gear final drive presented further challenges. After deciding the case was too complex to machine, Smith decided on casting it. That meant making more patterns and cores for the casting process. "I robbed some bearings and seals off a Suzuki," Smith admits.

Sourcing a suitable supercharger proved to be impossible. The Roarer used a Shorrock-type sliding vane supercharger, but Smith determined that Shorrock never made a model small enough to fit the Roarer, so he had to make one. "People said, 'What are you going to do about a blower?' and I said, 'I'm going to make one.' Well, I mean, that's what it's all about. If it was easy, everybody would be doing this. So I drew it up and made it. It was a nice exercise."

In a Shorrock blower, a central offset rotor carries a series of vanes that slide in and out as the rotor turns, drawing air/fuel mixture into an oval-section chamber. The chamber tapers away toward the blower's exhaust port, compressing the mixture as the rotor turns. The compressed mixture is then fed to the engine's intake. Smith was able to improve on the original design, which required oil mixed in with the fuel to lubricate the blower's bearings. Using modern sealed bearings, the lubricant was unnecessary.

"People said, 'What are you going to do about a blower?' and I said, 'I'm going to make one.'"

Cam timing also needs to be different from a naturally aspirated race engine to maintain boost pressure. "I've read that they used the cam out of a KSS, and that they had trouble getting their intake pressures up. Well, the overlap on a KSS is quite radical and with a supercharger, you should have zero overlap," Smith says. "I've got reasonable supercharge pressure that is in proportion to the rpm. I was getting 6 pounds at six grand." Smith expects to get 7-8 pounds of boost at 7,000rpm for a theoretical 12:1 compression. No blow-off valve is fitted, unlike the original Roarer. "Quite surprising, the blow-off valve was right down where the carburetor is. So if it blew, it would be spewing gasoline on hot exhaust pipes. Not a good thing if those pipes are turning red!"

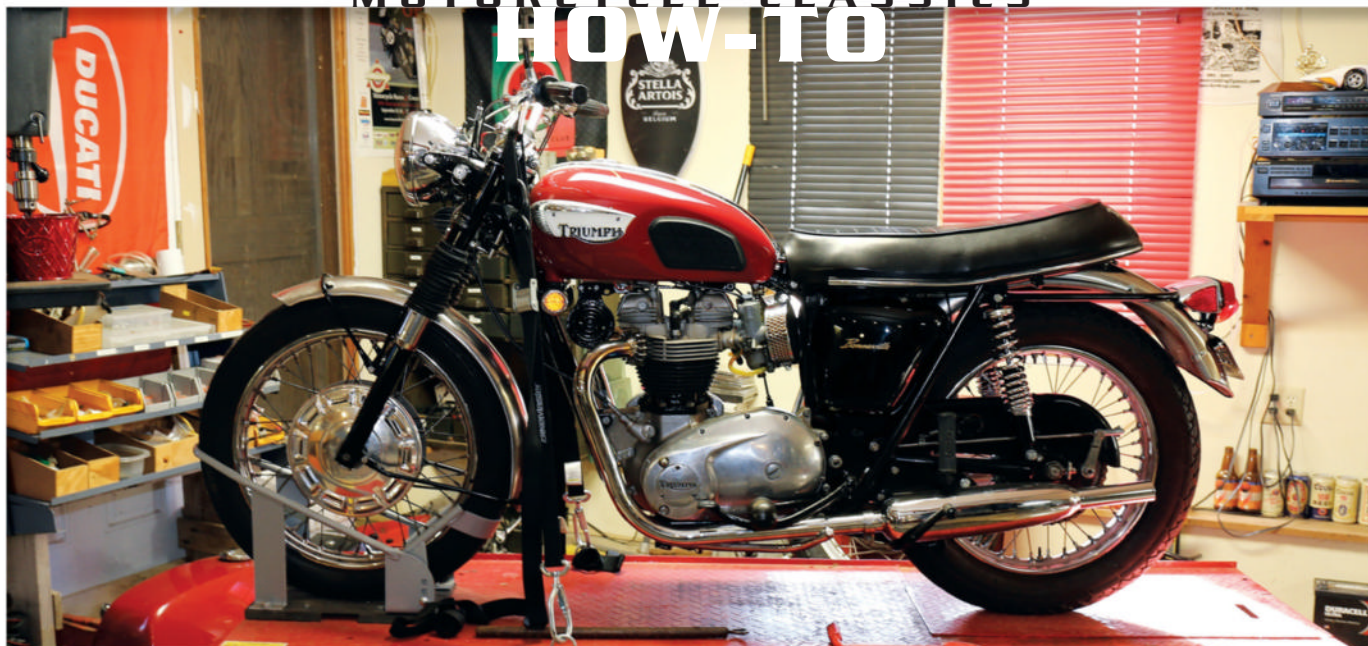
Drive to the magneto, a rare Lucas AC2, required cutting special helical gears, as the mag drive is at right angles to the crank, and running at half crankshaft speed. The engine was assembled using O-ring seals wherever possible, and the finished powertrain is oil-tight. Smith made the hubs and brake drums, fitting Suzuki shoes.

The chassis presented few problems. "The frame is made like a Tinkertoy set. A lot of straight tubes clamped together, so it was fairly straightforward," Smith says.

It took Smith a full three years to make the Roarer. The only issue showed up the first time Smith took it to Seattle International Raceway. On shifting up through the gears, Smith realized he had third and fourth gears reversed. Making a new selector camplate fixed that. Aside from a minor clutch pushrod wear issue and getting the carburetion right, the Roarer ran well.

So what was that first ride like? "It was good. I mean, it was a nail-biter because you made the whole thing. You don't know if you're going to hit a speed wobble," he says. Fortunately, he didn't. Now the challenge Smith has is finding a local track suitable to explore the Roarer's potential. But not its top speed. Presently, he has it geared for 120mph at 7,000rpm. "For me to do 140 miles an hour on that thing, I'd be crazy!"

To see the first start-up of the Roarer after the build, go to MotorcycleClassics.com/Roarers. **MC**



1968 Triumph Bonneville voltage regulator upgrade

Making sure your charging system is working to full capacity is important on a number of fronts. To begin with, there's the simple issue of generating enough voltage to keep your lights bright. This is particularly important on vintage bikes, which generally have low-capacity charging systems and run low-output headlights, which tend to be dim even with full voltage. And even if your lights are off, there's the issue of generating enough voltage for proper ignition. If you own a decades-old British twin, chances are good you've already ditched the stock ignition points for electronic ignition, a highly recommended upgrade to ensure steady, reliable firing of the spark plugs. However, some electronic ignitions are very sensitive to voltage supply, dropping completely out of circuit if the voltage drops below a certain range. Boyer electronic ignitions, for example, will drop out below 10 volts.

On Sixties and Seventies British bikes, the original Lucas charging system can be prone to failure. By the mid-Sixties, most British motorcycles were using Lucas charging systems with Lucas' silicone diode rectifier for AC to DC voltage conversion and a Lucas zener diode for voltage regulation. Although relatively simple components, after 40-50 years of vibration and exposure, the voltage regulator and rectifier are ripe for replacement. The original-style components are still readily available, but there are better products on the market that deliver superior performance and reliability, like the Podtronics voltage regulator/rectifier we recently installed on Tech Q&A man Keith Fellenstein's 1968 Triumph T120R Bonneville.

Keith's Bonneville didn't have any particular charging issues, but with a fresh Pazon electronic ignition upgrade, and wanting also to convert to 12-volt negative ground from positive ground, Keith considered it a good move. Adding to the appeal, it's also a

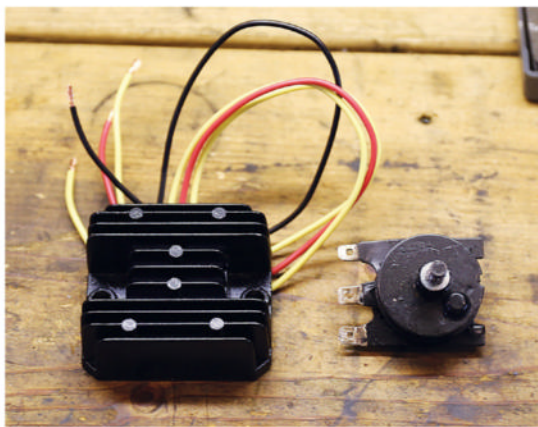
relatively cheap and easy conversion. The Podtronics unit was \$57 (before shipping), and while we did opt to clip off what became redundant ground lines from the old rectifier to the battery and frame, had we wanted to, we didn't have to make any permanent changes to the original wiring. Keith's bike already had a replacement wiring harness, so we didn't feel bad about altering it in any way as it's not original.

We also like this upgrade because A) it delivers superior performance over stock and B) the only way anyone will know the charging system has been changed is if they lift the seat and see the new Podtronics unit in place of the original Lucas silicone rectifier. On 1968 and up through the mid-Seventies Triumphs the Lucas regulator (the zener diode) is housed in a large, finned aluminum heat sink attached to the bottom of the lower fork yoke. You can leave it in place to preserve your bike's original looks, as we did, or remove it. For the conversion, we isolated the wiring to the zener diode and then tucked it into the headlamp shell.

We also switched the Bonneville's electrical system from 12-volt positive to 12-volt negative ground. The Podtronics will work either way, as

will the Pazon electronic ignition. Switching from positive to negative ground is easy, requiring no permanent changes. Finally, we upgraded to an LED headlamp and taillight. The taillight was a Sylvania Zevo 2357R red LED (\$24.95 at O'Reilly Auto Parts). We got our H4-style headlight shell (\$44.95) and 80-watt LED bulb (\$59.95) from Donelson Cycle (donelsoncycles.com). You'll also need an H4 headlamp socket and pigtail (\$3-\$5 at O'Reilly). The lights are much brighter and with a significantly reduced amperage draw, and they'll basically last forever.

As ever, we recommend having a good shop manual on hand for parts identification and proper torque specs.



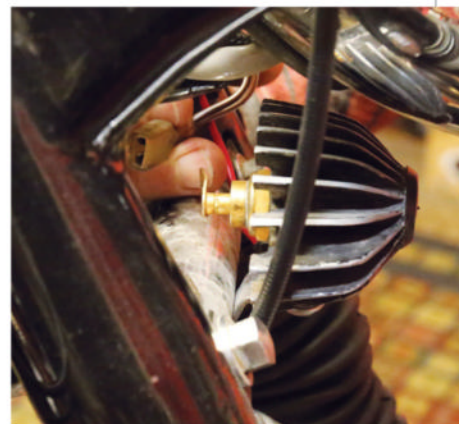
The Podtronics voltage regulator/rectifier (left) and the stock Lucas silicone diode plate rectifier.



1 Disconnect the positive lead to the battery, followed by the negative lead. The stock silicone diode rectifier is located behind the battery box. Remove the nut securing the rectifier. Remove the rectifier and disconnect the electrical leads.



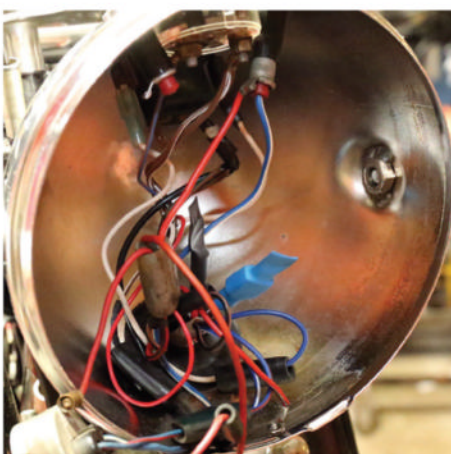
2 The zener diode, which regulates charging voltage, is housed in a large heat sink located on the lower fork yoke. We left it in place to preserve our bike's original look, but it must be taken out of circuit. Remove the ground strap from the bottom of the heat sink, then resecure the heat sink to its mount.



3 Next, reach behind the heat sink and unplug the brown/white lead running to the zener diode.



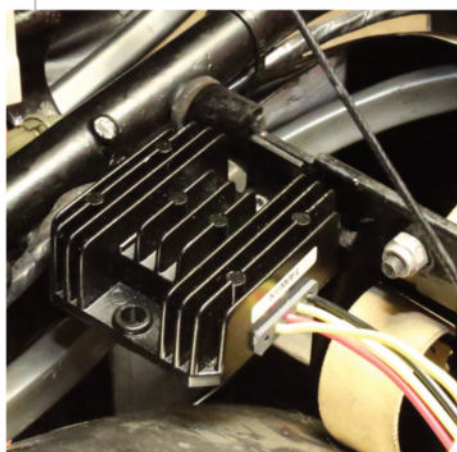
4 We left the wiring to the zener diode in place, isolating it from the system by sealing it in heat-shrink tubing.



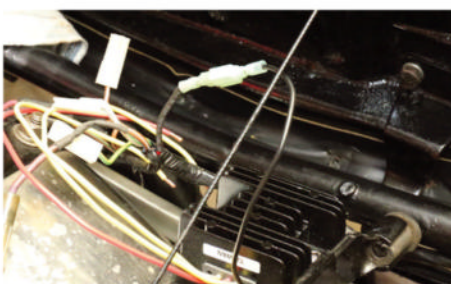
5 Next, we routed the now isolated wires into the headlamp bucket to keep them out of the way.



6 We also converted our Triumph from positive ground to negative ground, which required swapping the blue/brown and brown/white leads to the ammeter in the headlamp housing, shown here as they were positioned originally, with the brown/white lead already disconnected.



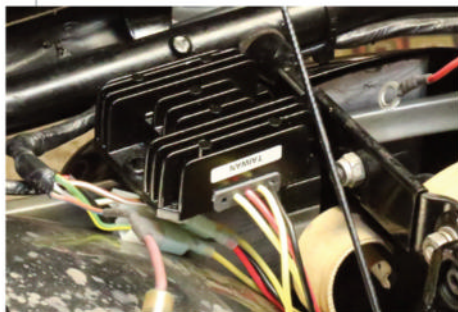
7 Next, we mounted the new Podtronics regulator/rectifier, securing it with a single bolt to the same locating point as the original rectifier.



8 We then connected the black lead from the Podtronics to the red ground lead from the wiring loom that previously ran to the ground post on the stock rectifier, wrapping the red lead with black heat shrink tubing to color code it as negative ground after first removing the now unneeded extra red leads that ran from the rectifier to the frame and battery.



9 Next, we connected the brown/white lead (which we marked with a "+" for positive) previously disconnected from the stock rectifier to the red lead to the Podtronics unit.



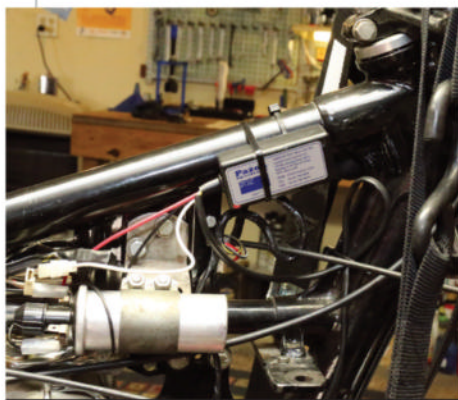
10 Connect the green/white and green/yellow alternator leads that ran to the Lucas rectifier to the yellow leads to the Podtronics unit. The alternator output is AC so it doesn't matter which alternator lead goes to which yellow lead to the Podtronics.



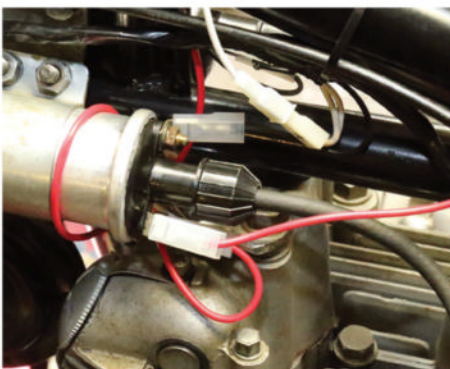
11 We installed a 15-amp blade-type fuse to the blue/brown power lead from the wiring loom after covering the blue/brown lead with red heat shrink tubing. The eyelet will run to the positive side of the battery.



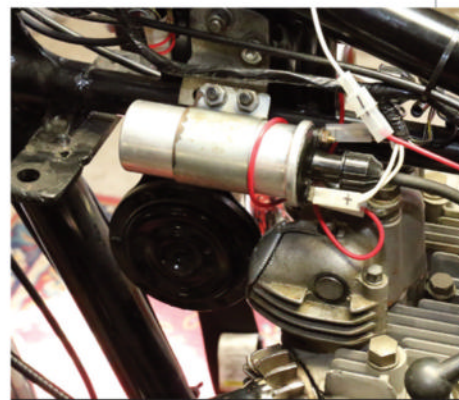
12 Here's the battery back in place, with the now red fused power lead running to the positive side of the battery and the formerly red but now black-sheathed ground leads running to the negative side of the battery.



13 Our Triumph was already running a Pazon electronic ignition. The Pazon will work with either negative or positive ground. With the conversion, the red and white leads had to be swapped.



14 As wired for positive ground, the red lead from the Pazon ran to the "+" side of the left ignition coil and the white lead ran to switched power. The red lead running rearward from the coil goes to ground.



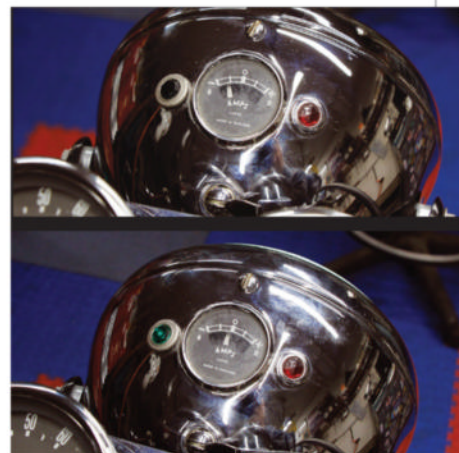
15 With the conversion to negative ground, switched power connects to the "+" side of the left coil. The red lead running to ground connects to the white lead to the Pazon.



16 We replaced the stock headlamp and taillight with LED bulbs. For the headlamp, that meant getting a complete shell compatible with H4-type halogen bulbs, but fitting it with an LED bulb. The replacement headlamp is on the left, the stock to the right.



17 For the taillight we used a Sylvania Zevo 2357R red LED bulb, which directs the light to the reflector. Like the LED headlamp, it's brighter and uses less power than the standard incandescent bulb, and should last basically forever.



18 The ammeter gauge tells the tale, the current draw with lights on dropping from 4 amps-plus (top) to less than 2 amps (above).

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“What lift you buy depends on what kind of work you’ll mostly use it for.”

Master cylinder fixes

Q: A couple of issues ago, I fielded a question about a pitted master cylinder on a Honda, where the part in question wasn't available as a replacement. I mentioned that I didn't know of any places that offered sleeves for Hondas, though I knew of plenty for British bikes. Several readers wrote back with places they knew of that offered that service. Proof, if any were needed, that motorcycle gearheads are the best people. Here's a sampling. Thanks to everyone who wrote in with solutions to the problem. — Keith Fellenstein

A: I had a similar situation on my 1980 Suzuki GS1000 even though it is used regularly. The infamous pitted bore, and since the bike is pretty much made out of unobtainium I had it sleeved. In my case I used White Post Restorations (whitepost.com). They installed a brass sleeve of the original bore size and now it's better than new with no more corrosion issues.

Floyd Webb/via email

A: In your response regarding the CBX master cylinder, you said you didn't know of any companies that provide sleeving service for Hondas or any other brand master cylinders. I have run into this issue on several of the vintage metric bikes I work on. There is a company in Minneapolis, Minnesota, that can sleeve pretty much any metric master cylinder as long as it's within the dimensions of the special European stainless steel tubing they stock. They bore out the cylinder, press in the stainless sleeve and then hone out the inner diameter to match the original inner diameter so OEM or after-market stock cylinder components will fit right in. Contact Brake & Equipment Warehouse (brakeandequipment.com)

Earl Johnson/via email

Yamaha 305 Big Bear

Q: I recently purchased a 1966 Yamaha 305 Big Bear. I had one of these when I was a teen and found it to be almost indestructible. I am wanting to reduce the oil mix ratio on the Autolube oil system. I have looked at several shop manuals and the factory only shows one setting. There is a pin that aligns with a mark on the pump and



Ready to take your classic queries: Old-bike mechanic Keith Fellenstein.

is adjusted with the throttle cable. I think that by using a synthetic 2-stroke oil (Amsoil) that I can reduce the oil mixture ratio, thereby reducing exhaust smoke and increase spark plug life, as well as improve overall performance. What are your thoughts on this, and what procedure would you recommend?

John Botts/Ponca City, Oklahoma

A: My usual solution to oil injection problems has been to bypass the pump if possible, and pre-mix to your desired ratio. The Yamaha manuals I have mention removal of the oil injection system as an option for competition and suggest a 40:1 gas/oil ratio. I have little experience here in changing the pump output, so I thought I'd get some expert advice from the folks at HVCcycle, 2-stroke specialists in Nebraska. Brad Obidowski from HVCcycle says: “Keep in mind the oil in the mix has to lubricate the crankcase main bearings too, so be careful you don't cause yourself engine problems chasing less smoke. Modern low ash oils burn better, leave less residue, smoke less, and protect better anyway. If you do decide to change the autolube pump, 0.012-0.015 inch is the standard shim gap. You need to reduce this to reduce the amount of oil. It's mostly guesswork once you deviate from the factory settings.” He also mentions that trying to adjust the flow by modifying the cable pull could result in too little oil at higher rpms, causing problems. Reducing the amount the cable

pulls will leave the output of the pump at an idle state longer, thus reducing the needed extra oil at cruising speed. Adjusting the shim stack keeps the oil delivery constant with the required throttle position and rpm range. My final advice would be to set it up as stock. Too many problems arise from getting the mix wrong.

Motorcycle lifts

Q: Can you tell me what to look for in a good motorcycle lift for home maintenance?

David Geiger/via email

A: Thanks for a great question. Which of course raises other questions, because what lift you buy depends on what kind of work you'll mostly use it for. I usually see two different types of lifts, the platform lift and the parallelogram lift. If you have the room for it, you can't beat a platform lift. If your space is limited, the other type takes up less space and is usually light enough to lean up against the garage wall. I use both, depending on the work at hand. If I'm replacing old tires, the parallelogram lift allows me to remove both wheels at once, handy for me because I don't have tire changing equipment and take all my tire business to another local shop. If I'm working on a long-term revival, the platform lift gives me room to place parts removed from the machine and lets me raise the bike up high enough to work on it comfortably. I started out with a Harbor Freight lift over 10 years ago, and that lift is still being used at editor Backus' shop. I replaced it with a Titan air-operated lift because I got tired of pumping the Harbor Freight lift up manually several times a day when I was working on multiple bikes.

Most if not all the platform lifts will have a rear wheel drop-out for tire work. Most if not all the platform lifts will come with an adequate front wheel chock, but if you use them much you will want something better. I've got a Condor Pit Stop/Trailer Stop. It works perfectly.

Email questions to keithsgarage@motorcycleclassics.com

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Ikon Albion shocks for vintage bikes and Tirox's SnapJack V2

Ikon Albion shocks

Old age is not always a good thing. Take the shocks on your '77 Suzuki GS750 or '68 Triumph Bonneville. They might look OK, but even when they were new, the shocks on many of our favorite vintage bikes were considered junk right out of the box, with period testers peevish over poor performance and early failure. Seventies Japanese shocks were particularly bad, but there was a lot of poor product coming out of England and Italy at that time, too.

The telltale of worn shocks is a bouncy ride, with poor spring control and almost zero rebound control. And control loss is more than just a performance issue, it's a safety issue, too. That makes bolting on a new set of shocks one of the single best ways to improve the ride and handling on older bikes. Better yet, it's typically a quick, easy job, making it somewhat ironic that more owners don't look at a shock upgrade as a first point of ride and handling improvement. We appreciate the aesthetic argument — modern shocks don't always look right on vintage bikes — but there are good options for swapping out that tired set of shocks that look right, as we found installing a set of Ikon's new Albion Series shock absorbers on Tech Q&A man Keith Fellenstein's 1968 Triumph Bonneville.

Created by Ikon USA for the U.S., Canadian and South American markets (and not available elsewhere), the new Ikon Albion was specifically designed for '60s, '70s and '80s Brit bikes, although clearly they would work on a host of Japanese and Italian bikes, as well. Fully rebuildable, they feature a 12mm



Old versus new: Ikon Albion at right.



piston rod and are available with any one of six different Ikon Tri-Rate springs to suit different rider weights and loads and feature adjustable spring preload. Damping is fixed, but Ikon says damping can be adjusted internally to suit rider preference. Currently available in lengths from 12-inch to 13.5-inch, Albion shocks are finished in black with chrome springs for a classic vintage look. More importantly, performance is miles better than anything you could buy back when your classic bike was new.

The old shocks on Keith's Bonneville were in typically bad condition: the eyelet mounting bushings were shot; the springs were sagging; and the shocks were "flat," with no or limited rebound. The Bonneville actually rode kind of OK, but I found myself unconsciously taking it easy because of the old shocks' limited performance. Ten minutes of wrenching later, a back-to-back ride with the new Ikon Albions installed proved just how bad Keith's old shocks were. Instead of bouncing and wallowing over uneven surfaces, the back end of the Bonneville is now absolutely planted. Spring load control is linear and sure, and the Ikon shocks' excellent rebound qualities transform the ride and the rider's sense of control. The improvement is so pronounced, it's almost like riding a different bike.

Adding to the good news is the price. \$350 a pair may not seem like pocket change, but considering the quality and performance, we think the Ikon Albions are an excellent buy. You can spend less, but you'll get less, and you'll never regret buying quality. More info: ikonshocksusa.com — *Richard Backus*

Getting a lift

Bikes without a centerstand are at a serious disadvantage when it comes time to clean or adjust the final drive chain because there's no easy way to get the rear wheel off the ground. A small hydraulic jack sometimes works — if there's enough room and you can find a solid purchase on the frame — but typically it's an exercise in frustration.

A nifty solution comes courtesy of Tirox Products and the SnapJack V2. Designed to simplify chain and wheel maintenance on bikes without a centerstand, the SnapJack is an extremely simple tool. First, lock the front brake handle with the included hook-and-loop locking strap. With the bike on the side-stand, position the SnapJack 3-4 inches away from the side of the rear tire. Place the cradle up against the swingarm with the upper leg at

about a 30-degree angle to the lower leg, then push against the top of the lower leg of the SnapJack to lift the bike, followed by inserting a locking pin to hold it in place. That's it. An aggressive cleat at the bottom keeps it from sliding on most surfaces, and it comes with an anti-skid pad for working on smooth or painted concrete. Adjustable, it has a total extension of approximately 12 inches at its shortest and 13.5 inches at its longest. I tried it out on my son's quasi-café'd 1972 Honda CB350 that he's running sans centerstand, and it worked perfectly. Of note, I found that the closer I positioned it to the rear wheel axle, the better it worked. Used in conjunction with Tirox's innovative 360° Chain Brush (Test Ride, January/February 2018), it made chain maintenance a breeze. Suggested retail: \$51.95. More info: thesnapjack.com — *Richard Backus*



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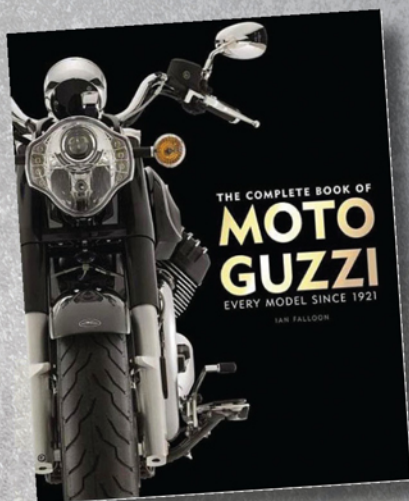
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RIDES AND DESTINATIONS

GRAND TETON NATIONAL PARK

Nestled between Yellowstone National Park and Jackson, northwestern Wyoming's Grand Teton National Park is a marvelous destination made even more wonderful by the incredible riding that is the magic and beauty of northwestern Wyoming. Grand Teton National Park is a great destination, but it should not be an exclusive objective in this part of the world.

Yellowstone National Park lies just to the north (see *Motorcycle Classics*, January/February 2016), touristy Jackson lies just to the south, and all the surrounding areas are amazing. Grand Teton National Park is bisected by the Snake River flowing south from Yellowstone and framed by the dramatic Teton Range. The area is a delightful succession of breathtaking photo opportunities that include stunning vistas, sharp mountain peaks, pristine lakes, wild animals and beautiful

roads. It is a region perfect for motorcycle exploration.

Formed an estimated 6 to 9 million years ago, the Teton Range is the youngest part of the Rocky Mountains. Game abounds, and it is not at all unusual to see elk, deer, bison and antelope. Bighorn sheep, wolves, mountain lions, and grizzly and black bears are more elusive, but they are here, too.

It was this abundance of wildlife that first brought people to the area. Nomadic tribes entered 11,000 years ago. Shoshone Native Americans followed. Fur trappers arrived in the early 1800s, and the U.S. Army explored the area in the mid-1800s. These early fur trappers and explorers included men like Jedediah Smith, U.S. Army scout Jim Bridger, and David Jackson (for whom Jackson Hole, the valley beneath the Teton Range, would later be named). Prospectors tried their luck

and left when it became apparent there were no precious metals, but the region continued to draw visitors attracted to its great beauty.

Efforts to designate the Teton Range as a national park started in the late 1800s and President Calvin Coolidge did so in 1929, but the transition from pristine wilderness to federal land was not without controversy. John D. Rockefeller started quietly buying land in Jackson Hole and donating it to the federal government through his Snake River Land Company. The Rockefeller land was designated Jackson Hole National Monument in 1943, and then in 1950 it all became part of the Grand Teton National Park. Local ranchers opposed national park designation and subsequent expansion based on fears of increased federal control and loss of water and grazing rights. The fight continued into the 1950s, with armed confrontations framing a debate over big government versus local rights. It ended with a compromise that allowed continued hunting and grazing rights, and a prohibition on any future presidential national park designation or expansion in Wyoming.

Wyoming's scenic byways (US 189/191 and US 26/287) are a great ride into Grand Teton National Park. It's hard to go wrong selecting any part of northwestern Wyoming for a motorcycle ride, with the possible exception of downtown Jackson. Jackson is a well-known vacation spot for the well-heeled and it has an interesting elk-antler-framed town square (a great photo op), but Jackson traffic is mind-numbing (as are the prices on, well, everything). I found Jackson too touristy for my tastes; your mileage may vary.

Winters are brutal: The lowest winter temperature ever recorded in Grand Teton National Park was a bone-chilling -63 F and the Teton Range sees nearly 40 feet of snow annually. The summers are marvelous, though, and a motorcycle ride to and through Grand Teton National Park should be on every rider's bucket list. — Joe Berk

THE SKINNY

What: Grand Teton National Park, Wyoming.

How to Get There: Wyoming Scenic Byway US 189/191 is the hot ticket riding in from the south. From the east, Wyoming Centennial Scenic Byway US 26/287 is similarly stunning. Any road through and to this region is breathtaking!

Best Kept Secret: Named by French trappers in the 1800s as *les trois tétons* (the three teats), the tallest 13,775-foot peak became *le grand téton* (the large teat).

Avoid: The winter months and departing for Grand Teton National Park without checking the weather.

More Info: nps.gov/grte/index.htm

More Photos: californiascooterco.com/blog/?p=26449



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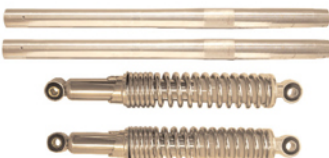


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Circle #3; see card pg 81

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CALENDAR MARCH/APRIL

Don't miss these upcoming events!



Head to Martin Motorsports in Boyertown, Pennsylvania, for the Modern Classics Motorcycle Show on March 3.

3/3 Back for its eighth year, check out the Modern Classics Motorcycle Show. This year, in addition to a great collection of bikes from the 1960s through the 1990s, the show will also feature a sampling of machines from the first half of the 20th century. Check out the Friday Night Modern Classics Kickstart Party from 7-10 p.m. at the show's home, Martin Motorsports in Boyertown, Pennsylvania. On the web at martinmoto.com

3/9 This year marks the 77th Anniversary of Daytona Bike Week, which runs March 9-18, in Daytona Beach, Florida. The racing kicks off on Saturday night, March 10, with the Daytona Supercross. The American Flat Track series Daytona TT runs on Thursday, March 15. The 2018 Daytona 200 takes place on Saturday, March 17, featuring American Sportbike Racing Association's (ASRA) 600cc sport bikes racing on Daytona's famed road course. For more info, schedules and specific locations of activities visit the Bike Week site. On the web at officialbikeweek.com

3/17 Visit Rapid City, South Dakota, for the 30th Annual Black Hills Motorcycle Show, March 17-18, at the Rushmore Plaza Civic Center. There are more than 20 judged classes, including People's Choice. On the web at blackhillsmotorcycleshow.com

4/27 Head to Willow Springs International Raceway in Rosamond, California, for the Corsa Motoclassica, April 27-29. Rounds 7 and 8 of the AHRMA Historic Cup Roadrace Series will be Saturday and Sunday. There's a vintage bike show on Saturday and a swap meet both days. On the web at willowspringsraceway.com

Motorcycle Classics wants to know about classic motorcycle shows, swap meets, road runs and more. Send details of upcoming events at least three months in advance to lhall@motorcycleclassics.com

Mar. 4 — Walneck's Swap Meet and Show. Princeton, IL. walneckswap.com

Mar. 4-5 — 28th Annual Super Show and Swap Meet. Colorado Springs, CO. pro-promotions.com

Mar. 9-10 — AMCA 2018 Sunshine Chapter National Meet. New Smyrna Beach, FL. sunshineamca.org

Mar. 9-10 — Vintage Motorcycle Alliance 7th Annual International Vintage Motorcycle Swap Meet and Bike Show. Eustis, FL. vintagemotorcyclealliance.com

Mar. 9-11 — 15th Annual Inland Northwest Motorcycle Show and Sale. Spokane, WA. spokanemotorcycleshow.com

Mar. 11 — Walneck's Swap Meet and Show. Springfield, OH. walneckswap.com

Mar. 17-18 — 42nd Annual Vintage Motorcycle and Bicycle Rally & Show. Caldwell, ID. idahovintagemotorcycleclub.org

Mar. 18 — 46th Annual Kalamazoo Motorcycle Swap Meet. Kalamazoo, MI. kalamazooswap.com

Mar. 25 — So-Cal Cycle Show and Swap Meet. Long Beach, CA. socialcycleswapmeet.com

Mar. 30-Apr. 1 — AHRMA Road Racing at Carolina Motorsports Park. Kershaw, SC. ahrma.org

Mar. 31 — Giddy Up Vintage Chopper Show. New Braunfels, TX. www.giddyuptx.com

Apr. 14-15 — Eurobike 2018. Raleigh, NC. eurobikeraaleigh.com

Apr. 20-22 — The Handbuilt Motorcycle Show 2018. Austin, TX. revivalcycles.com

Apr. 20-22 — AHRMA Road Racing at Hallet Motor Racing Circuit. Jennings, OK. ahrma.org

Apr. 22 — Walneck's Swap Meet and Show. Woodstock, IL. walneckswap.com

Apr. 22 — So-Cal Cycle Swap Meet. Long Beach, CA. socialcycleswapmeet.com

Apr. 22 — Jeff Williams Motorcycle Swap Meet. Kansas City, MO. jwswapmeet.com

Apr. 25-28 — 36th Annual Laughlin River Run. Laughlin, NV. laughlinriverrun.com

Apr. 27-28 — AMCA National Meet Perkiomen Chapter. Oley, PA. antiquemotorcycle.org

Apr. 31 — 15th Annual Cadillac Swap Meet. Cadillac, MI. cadillacswap.com

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New Stuff for Old Bikes

From Honda wiring harnesses to lithium-ion-friendly voltage regulators, here are six cool products every classic bike fan should know about.



Honda CBX wiring harness

Honda specialist Randakk's Cycle Shakk has added seven new wiring harnesses to their growing stock of specialty parts for vintage Hondas, including this main harness for the 1979-1980 Honda CBX. A faithful reproduction of the original, it features correct OEM-style connectors and color-coded wire for easy installation. Harnesses are also available for the Honda CB350 Four, CB400 Four, CB500/CB550 Four and 1972 and 1976 CB750K. \$138.68 (CBX). More info: randakks.com



Honda headlights

Vintage motorcycle parts supplier EMGO has revised its classic Honda CB900 replica headlight to make it DOT compliant. Available in chrome or black with chrome trim ring, EMGO's replica Honda headlight is perfect for restoration and custom work and comes complete with a 12-volt, 60/55-watt H4 halogen bulb and wiring pigtail. Suggested retail: \$52.95. More info: emgo.com



Rider app

Here's a cool navigation aid: WolfPack, a new app designed to help groups ride together and stay together. Using Google Maps for navigation, the app lets multiple riders tune into the same route while also showing the location of every rider in the group while in motion. Communication to group members is easy with three-tap messaging, sending pre-set messages like "stop for gas" or "I need food." The basic version is free, while the premium version adds multiple features for \$1.99/month. More info: wolfpack.run



Lithium-ion battery friendly voltage regulator/rectifiers

Rick's Motorsport Electrics has developed voltage regulator/rectifiers specially calibrated for charging lithium-ion batteries. Designed in partnership with lithium-ion battery specialist Ballistic Performance Components, Rick's lithium-ion-friendly regulators feature a voltage set point of 14 volts (plus or minus 0.2 volts) instead of the standard voltage set point of 14.5-14.7, necessary for long life in lithium-ion batteries. Currently available for 31 different Japanese and Italian applications, with more being introduced regularly. \$94.95-\$129.95. More info: ricksmotorsportelectrics.com



The year's best calendar

Artist and motorcycle journalist Rachael Clegg's calendar, *Milestones: The Singles Collection*, is performance art set to a calendar. The daughter and granddaughter of former TT racers, Clegg is deeply serious about her love for the IOM, and her black-and-white images share the history of the Isle of Man TT course through Clegg's unique perspective "I've been going to the IOM TT since I was a child," Clegg says. "It is magical and to this day I get goose pimples each time a bike rushes past me down Bray Hill." Amazing. \$35 (approx.). More info: rachaelclegg.com



Race Tech G3-S shocks

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Circle #2; see card pg 81

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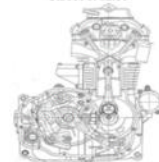
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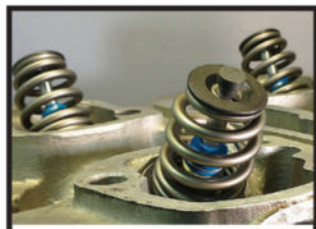


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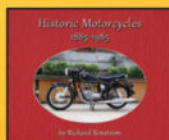
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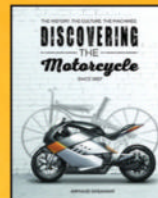
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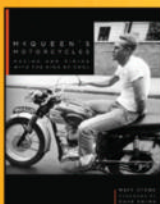
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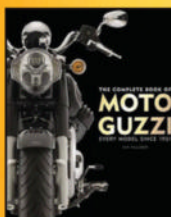
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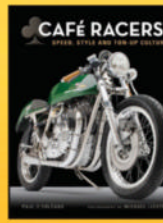
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The Complete Book of BMW Motorcycles

The Complete Book of BMW Motorcycles is a thorough year-by-year guide to every production machine ever built by Germany's leading motorcycle manufacturer. Get the story behind bikes such as the pre-World War II R5, the military R12, and the K1 "flying brick". This guide captures nearly a century of motorcycling excellence with a combination of historic and contemporary photos.

#7756 \$50.00 \$42.50



The Complete Book of Ducati Motorcycles: Every Model Since 1946

The Complete Book of Ducati Motorcycles traces the stunning chronology of the motorcycles dreamed up by Ducati, from the 1940s to the present day. Laid out for the first time in the form of an encyclopedia, with gorgeous photography and insights from Ducati expert Ian Falloon, this book offers motorcycle enthusiasts a closer look at the craftsmanship, power, and beauty of these extraordinary motorcycles. The book features all of the motorcycles from Ducati's storied history, including the groundbreaking Desmodromic 750 Super Sport, the Mike Hailwood Replica, the Superbike-dominating 916, and the epic Panigale.

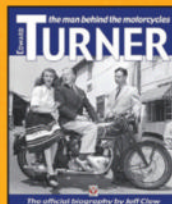
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How to Build a Café Racer

The book starts with chapters on planning and choosing an appropriate bike, followed by chapters that detail the modifications that will likely be embraced by anyone converting a stocker to a rocker. From shocks and tires to engine modifications, Doug Mitchell's book lays out each type of modification and how it's best carried through. The center of the book holds a gallery of finished bikes. The final chapters include two, start-to-finish Café builds.

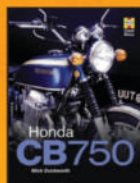
#6684 \$27.95



Edward Turner: The Man Behind the Motorcycles

For the first time, the life of Edward Turner, one of Britain's most talented motorcycle designers, is revealed in full - making this much more than just another book about Triumph motorcycles. Although seen by many as an irascible man who ran a very tight ship, it is an inescapable fact that his was a highly profitable company.

#8247 \$35.95



Honda CB750

Honda's CB750 was one of the most important bikes of the 1970s, and is considered by many to be the original superbike. Launched in 1969, Honda's first four-cylinder roadster revolutionized the motorcycle market, setting new standards of sophistication, user-friendliness, and reliable high performance. This 144-page hardcover book covers all the information you want on this bike.

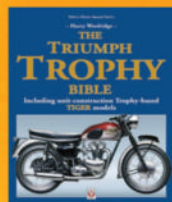
#5566 \$39.95



The Women's Guide to Motorcycling

Author Lynda Lahman, herself a motorcycle owner and rider, provides a comprehensive look at motorcycling techniques, street smarts, and safety concerns while addressing female-specific challenges as well as issues that all bikers face from a female point of view. Lahman provides advice about choosing a bike, proper maintenance, types of riding, bike clubs, and more.

#8248 \$24.95



The Triumph Trophy Bible

This is the complete year-by-year history of the Trophy (and unit construction Tiger) twins from 1949 to 1983. It includes original factory model photos, technical specifications, color schemes, engine and frame numbers, model type identification, and details of Trophy and Tiger achievements. As a longtime employee at Triumph's Meridian factory, Harry Woodridge shares his knowledge and expertise to provide the complete source book for Triumph Trophy owners and enthusiasts.

#8058 \$60.00



Classic British Motorcycles

In the modern era, mass-produced motorcycles tend to be Japanese or Italian, with the "big four" Asian manufacturers dominating the market. However, until the 1950s, and even into the '60s, British makers such as Norton and Vincent ruled the roost. These legendary companies, and many smaller British firms, are motorcycling's founding companies. Superbly illustrated with more than 150 color pictures, many previously unpublished, this book is a captivating and highly informative account of the men, machines, race meetings, and world events that shaped the development of the motorcycle from its bicycle origins.

#7758 \$32.00



The Build: How the Masters Design Custom Motorcycles

In *The Build*, Robert Hoekman Jr. compiles insights from today's best builders to help you plot out your own beautiful beast. This book is as much a 192-page motorcycle art book as it is a blueprint to building the perfect custom bike. The book is the bible of custom motorcycle design, starting with an explanation of all the different bike styles, and then moving into a concise, easy-to-read guide that takes you from finding a donor bike to figuring out how to alter the lines to your liking. The book also covers selecting and building parts, painting and finishing, and what kind of performance modifications might be appropriate.

#8053 \$45.00

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A Look Back into the Crystal Ball

Marketing surveys today are the lifeblood of motorcycle product planners. Time spent in the field questioning enthusiasts and potential customers helps corporate bigwigs determine what models to build in coming years.

Things were different 50 years ago, when product planners relied heavily on what they thought consumers would buy rather than using hard data to set the course. Nobody knows that better than Willie G. Davidson, Harley-Davidson's former chief stylist and grandson of William Davidson, one of H-D's founders. Willie G. joined The Motor Company's design and styling department during the 1960s. By 1969, he sketched a design that warranted attention by Harley's front office. "I lived in a unique time," recalls Willie G. "I didn't have committees to go through with new models." Instead, he and other stylists and marketing strategists moved forward with designs they calculated — and hoped — would work. One of Willie G.'s early designs was the FX Super Glide, a hybrid with the lightweight front end of an XL Sportster attached to the massive frame of an FL Electra Glide. Thus the FX nomenclature.

But what about the name Super Glide? Well, that partially came about because during that same period the motorcycle industry was searching for words to describe the growing onslaught of powerful motorcycles with their multi-cylinder engines from Japan. Words like "Oriental Expresses" and "Monsterbikes" (quoted in *Cycle* magazine's August 1968 and March 1969 issues, respectively), were used in editorial, but the word that eventually stuck was "Superbike."

Most insiders point to the Honda CB750 as the iconic Superbike, and the word pops up in various periodicals from the era. One early Superbike reference appeared in the June 1970 issue of *Cycle Guide*, where the editors used it in a two-page spread forecasting what would become Harley's 1971 FX Super Glide. The article, titled "We Predict ...", opened with the following lead sentence: "Portrayed here is probably Milwaukee's answer to the current trend of hotter than hot production motorcycles. This 'Superbike' could once and for all re-establish HD as the 'out-performer.'" The article described the bike in minute detail, right down to wheel sizes and the "Sportster front end featuring a small tucked in headlight."



A sketch of the Super Glide from the pages of *Cycle Guide* (above). The cover of the November 1970 issue of *Cycle* (top).

Harley-Davidson's Outrageous Super Glide



Today, Willie G. says that, following a special marketing survey conducted in early 1969, photos of the FX prototype appeared later that same year on the pages of Peterson Publishing's *Motorcycle Sport Quarterly*, edited by the late Bob Greene. "We planted the photos of the bike in his [Greene's] magazine to see if we could get some feedback from people," Willie G. recently explained. Next, Willie and the Boys tried another source, *Cycle Guide*, and that 1970 article included four artist renderings of a phantom bike.

Finally, the production Super Glide appeared on *Cycle's* November 1970 cover. The test report inside revealed that the FX sprinted through the quarter-mile in 13.90 seconds at 96.25mph — Superbike specs for that era. The editors' parting words on the new "Superbike" stated: "The Super Glide faces you brazenly: it is what it is — massive bolts attaching massive appurtenances to a massive frame and a seat configuration that stretches over the horizon, the whole issue propelled along by an enthusiastic engine neither having nor wanting any excuses." — Dain Gingerelli

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